Strategic Appraisal 1997

Strategy
and
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Planning

for the 21st Century

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PREFACE

> The difficulty in life is the choice.
> — George Moore
> 1852–1933

In the preface to his classic work *On Thermonuclear War*, RAND's Herman Kahn mused on what he called the painful problem of choice. Writing in 1960, Kahn was concerned with the weightiest issues of his day. He pointed to choices "open to the free world" that included peaceful coexistence, rearmament, Soviet domination, and thermonuclear war. Like Bernard Brodie, Albert Wohlstetter, and other defense strategists of his day, Kahn was preoccupied with problems associated with trying to contain Soviet power and expansionism while minimizing the risk of war. Thanks in part to the efforts of Kahn and others like him, those engaged in defense strategy and planning today are confronted with problems for which the stakes involved are considerably less grave. With the collapse of the Soviet Union and the tentative embrace of less confrontational objectives by the most important of its successor states, our security environment is no longer dominated by the reality of vast military power in the hands of an implacable foe. In this sense, the risks of failure for defense planners are certainly less starkly immediate than they were in Kahn's day.

Yet the posture and capabilities of the U.S. armed forces remain central factors in global stability. Put simply, the United States is the world's preeminent military power and the chief "exporter" of security. For the foreseeable future, if the industrial democracies of North America, Europe, and East Asia are confronted with serious

military challenges to their interests, it will be up to the United States to take the lead in defeating these challenges. More broadly, whether the world evolves toward a more stable, peaceful, and prosperous future or toward a future characterized by instability, deepening rivalry, and conflict depends very much on future U.S. policies and America's capacity to effectuate its policies. Hence, even in the absence of a superpower adversary, much depends on the United States getting its defense strategy, planning, and resource allocation right.

This book is intended to contribute to that effort. It is the product of many hands and is more a collection of the ideas of individuals than a tightly cohesive treatment of the problems of defense strategy and planning. While the chapters, in toto, address what we see as the most significant issues facing defense planners, the book is not comprehensive. For example, this volume says almost nothing about the future U.S. nuclear posture (something that would have astonished Herman Kahn), although it considers from several aspects the challenge of chemical, biological, and nuclear weapons in the hands of future adversaries. There is also little discussion of individual defense programs or weapon systems. Likewise, the reader who is looking for "RAND's force structure"—specific numbers and types of units that the authors believe should be fielded—will be disappointed.

The intent here is rather to cast light on the issues that will bear most heavily on policymakers and analysts as they grapple with the need to reshape U.S. military forces and capabilities for the 21st century. Too often work done on and for the U.S. defense community offers specific "answers" while going light on whatever analysis might underpin those answers. We reverse that emphasis on the assumption that what decisionmakers most need is help in understanding the primary factors at play in an issue, the ways in which they interact, and the kinds of outcomes that might result from particular choices. Armed with this sort of analysis, they can then make informed choices.

This book is dedicated to the goal of a U.S. defense program that is structured on the basis of a careful and honest assessment of future needs, an appreciation of the possibilities offered by emerging technologies and operational concepts, and a willingness to adopt

new approaches when these have been shown to be relevant and feasible. The United States has rightly adopted an expansive and ambitious strategy to guide its actions in the post–Cold War world. Superior military capabilities will be needed to support this strategy. Yet the resources available to sustain U.S. forces will be tight.

All of which brings us back to the necessity for choice. Within the U.S. defense establishment, it is less and less possible to hedge against uncertainty by fielding redundant capabilities. Likewise, the cost—in terms of forgone military capabilities—of avoiding politically painful initiatives to make our defense establishment more efficient is mounting inexorably. Hence, U.S. defense planners will be confronted with stark choices between high-priority modernization needs and force structure, between operational capabilities ("tooth") and support structure ("tail"), and between traditional approaches to warfare and innovations that offer appealing efficiencies but also some risks. There is not, in short, a risk-free option. The choice is between different types and levels of risk.

If there is a single theme that runs through these chapters it is this: The challenge of fielding the world's most capable military force within strict resource constraints can be met, but only if the nation's leaders are willing to make extensive changes in the U.S. defense establishment. These changes encompass the roles assigned to different types of forces, both in peacetime and war, and the ways in which the Department of Defense does business. The Department of Defense has started down these roads, but even with committed leadership and sustained efforts, change of this magnitude will take considerable time to implement. There is little time to lose.

Strategic Appraisal 1997 is RAND's second book in an annual series that reviews for a broad audience issues bearing on national security and defense planning. *Strategic Appraisal 1996* assessed challenges to U.S. interests around the world, focusing on key nations and regions.

It is hoped that this series will contribute to "the public welfare and security of the United States of America"—the purposes for which RAND was chartered.

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ABBREVIATIONS

AFB	Air Force Base
ARG	Amphibious Ready Group [Marine]
ATACMS	Army Tactical Missile System
BAT	Brilliant Anti-Tank
BUR	Bottom-Up Review
DoD	Department of Defense
DSB	Defense Science Board
C^3I	Command, control, communication, and intelligence
C^4I	Command, control, communication, computers, and intelligence
C^4/ISR	Command, control, communication, computers, intelligence, surveillance, and reconnaissance
CA	Civil Affairs
CINC	Commander in chief
CONUS	Continental United States
CS/CSS	Combat support and combat service support
CVBG	Carrier battle group
DOB	Deployment operating base
EAD	Echelon above division
ED	Equivalent division
FMI	Foreign military interactions
GPS	Global Positioning System
IMET	International Military Education and Training
LIC	Low-intensity conflict
LRC	Lesser regional conflict
MEF	Marine Expeditionary Force
METL	Mission-essential task list

MLRS	Multiple Launch Rocket System
MOB	Main operating base
MOOTW	Military operations other than war
MRC	Major regional conflict
NATO	North Atlantic Treaty Organization
NDP	National Defense Panel
NAEATO	North Atlantic and East Asian Treaty Organization [hypothetical]
NMS	National Military Strategy
OOTW	Operations other than war
OPTEMPO	Operational tempo
OSD	Office of the Secretary of Defense
PCS	Permanent change of station
PGM	Precision-guided munition
POMCUS	Prepositioned overseas materiel configured in unit sets
PPBS	Planning, Programming, and Budgeting System
QDR	Quadrennial Defense Review
R&D	Research and development
RISTA	Reconnaissance, intelligence, surveillance, tracking, and acquisition
RMA	Revolution in military affairs
ROK	Republic of Korea
SAM	Surface-to-air missile
SEAD	Suppression of enemy air defenses
SOF	Special Operations Forces
TDY	Temporary duty
TMD	Theater missile defense
TTP	Tactics, techniques, and procedures manual
UAV	Unmanned aerial vehicle
UN	United Nations
UNMIH	United Nations Mission in Haiti
USAF	United States Air Force
WMD	Weapons of mass destruction

Chapter One

INTRODUCTION

Zalmay Khalilzad and David Ochmanek

For U.S. defense planners, these are the best of times and the worst of times. On the one hand, with the collapse of our erstwhile Cold War adversary, basic questions of national security strategy are once again in play. In light of this change, there has never been greater scope for reviewing U.S. national objectives and threats to them, creatively weighing these against resources available, and crafting a strategy suitable to new and emerging conditions. At the same time, extraordinary developments emerging from the technology base are opening up possibilities for radically new ways of conducting military operations.

Taken together, these trends should spark a wide-ranging set of debates about the best way for this nation to go about protecting and advancing its interests in the future, the roles that military power should play in U.S. national security strategy, and the appropriate size and mix of U.S. military forces. Yet, to date, these debates have seemed constricted, if not stillborn. Perhaps one reason for this is that Americans have not yet embraced a broad set of guiding objectives for U.S. foreign policy and security strategy. Too, the shrinking of the defense budget poses a seemingly endless set of management challenges as we try to downsize the defense establishment without severely disrupting the activities of commanders and forces in the field. Resource constraints have also heightened sensitivities, so that at the level of military force structure and program analysis, it is difficult to escape the feeling that every position is evaluated first through the lens of Service parochialism ("What will this mean for my Service's or branch's budget share?"), rather than from a per-

spective that seeks to identify the capabilities that will be most needed in the future, irrespective of Service.

In short, we believe that our national security problems both permit and demand a fresh look. This volume represents one attempt to do this. The book is a collection of essays that span the gamut of defense planning. In it, we address the following major issues:

- What basic national security strategy is most appropriate for the era we are entering?

- What major missions must U.S. military forces be prepared to undertake to support this strategy? Under what conditions might these missions have to be carried out?

- How should the Department of Defense (DoD) conduct force planning and evaluation so as to take full account of uncertainties in the future operating environment?

- What criteria should be used to size overall U.S. forces? Is a "two regional conflicts" posture appropriate, either as a planning objective or as a public description of the capabilities of the armed forces of the United States?

- How capable will programmed U.S. forces be in conducting future combat operations? What should be our top priorities for improving their capabilities?

- What are the implications of emerging technologies for the way U.S. forces fight, and for force mix and size?

- What role should planning for smaller-scale operations (so-called "operations other than war") play in U.S. force planning?

- How should U.S. forces be restructured to provide a stabilizing presence abroad in peacetime?

- Are future defense budgets likely to be sufficient to sustain the forces and capabilities we need?

- To what extent can reforming and reshaping DoD's infrastructure and business practices yield savings needed to sustain, operate, and modernize the force?

All of these questions and others addressed in this volume bear heavily on the management of the U.S. defense program. The year 1997 will be particularly important for defense planning because two major reviews of our defense are being conducted—the Quadrennial Defense Review (QDR), which the DoD is conducting; and the National Defense Panel (NDP), an independent and nonpartisan outside group that will review the process and findings of the QDR and make its own recommendations about the future U.S. defense posture and the resources needed to sustain it. The essays in this volume are meant to contribute to these defense reviews, and to the continuing efforts to manage the U.S. defense establishment, by suggesting where the defense leadership might focus its attention and by offering insights on many of the most important issues they will need to confront.

While each of the essays is independent of the others and while we have not tried to force a consensus among the authors, several themes emerge that run strongly through all of the contributions. Collectively, these themes serve as a fair summary of many of the book's major points:

The Need for a Broadly Accepted Strategy of U.S. Global Leadership and Engagement. The United States is the world's preeminent power—a status that we should work to consolidate. Furthermore, our nation has important and growing interests in multiple regions. Allied and friendly nations abroad share many of these interests, but only the United States has the capabilities to defend them against the full range of military challenges that might arise. Moreover, U.S. interests are served by the gradual growth and spread of pluralistic political institutions and free-market economic principles. Because of its unique capacity to lead, the United States has both the opportunity and the responsibility to work actively to foster an environment in which such values can spread. For these reasons, there can be no responsible alternative for the United States to an ambitious strategy of global leadership and engagement in the affairs of these regions.

The Shifting Focus of Challenges to U.S. Interests. U.S. military planning and our military posture abroad, while broadly appropriate to today's situation, will face increasing pressures to adapt as the nature of potential challenges to U.S. interests shifts. As NATO

becomes more occupied with projecting stability eastward and coping with potential threats to its south, U.S. military forces in Europe will need to adjust both their geographic focus and the nature of the missions for which they prepare. Likewise, growing Chinese power and the possibility of a change of government in North Korea will compel U.S. forces in East Asia to develop capacities for effective operations over a broader area and set of missions.

The Need to Take Emerging Threats Seriously. Since before the Gulf War, U.S. defense planning has focused on a fairly narrow set of contingencies against which to measure and prepare U.S. forces. The scenarios that portray these contingencies have generally permitted planners to avoid coming to grips with serious and plausible emerging challenges, including the possibility of short-warning invasions, weapons of mass destruction, advanced air defenses, and enemy capabilities to complicate access to overseas regions. Such challenges, if not addressed, may create "Achilles' heel" vulnerabilities in U.S. strategies for power projection that would, in effect, neutralize many of the advantages our forces enjoyed in the Gulf War.

Finding the Resources for Modernization. To address these emerging problems and to capitalize on promising new capabilities, it will be necessary to increase substantially the money DoD is spending on the modernization of its forces. It seems unlikely that DoD will succeed in generating these funds from cuts in infrastructure, acquisition reform, and other "overhead" accounts, at least over the near to middle terms. Hence, we are facing the need for another round of cuts to force structure. Such cuts are always difficult to allocate; they will be especially difficult now because changes in the nature of warfare dictate that the cuts be uneven across types of forces.

New Approaches to Warfare. U.S. forces are in the midst of a period of great dynamism in their capabilities for theater warfare. Radical changes in technologies for surveillance, data processing, miniaturization, aerodynamics, and other areas are enabling the realization of new operational concepts that can allow U.S. forces to accomplish some objectives with far greater effectiveness than those of a generation ago. Given the requisite levels of investment, these new capabilities can permit U.S. forces to meet emerging challenges. Perhaps the main task confronting defense planners today is to underwrite new concepts that offer the greatest leverage in an environment in

which defense budgets are, at best, constant and in which there are many competing demands for resources.

For a whole host of reasons—strategic, technical, political, and economic—a "business as usual" approach to managing the defense program is unlikely to produce the military capabilities that will be needed to support the ambitious U.S. national security strategy that we see as necessary for the future. The demand for first-rate U.S. military forces is high, and their jobs are getting more difficult and more varied. With little margin for error, defense planners must have a clear sense of priorities and a willingness to break with traditional patterns when these are no longer sufficient. Clear, creative thinking and courageous leadership will be essential. It is our hope that the ideas gathered here might contribute to this process.

STRATEGY AND DEFENSE PLANNING
FOR THE COMING CENTURY

Zalmay Khalilzad

This year, 1997, can be an important year for the future of U.S. military strategy and for defense planning. Several reviews of our defense programs are being conducted this year. Two are particularly important: the Quadrennial Defense Review (QDR) and the National Defense Panel (NDP).

Whether the contributions made by these reviews will be important and long-lasting will depend on many factors. One key factor will be whether they help the nation decide on a new grand design or architecture that would guide the planning of future forces.

Deciding on a new grand design to take the place of our Cold War policy of containment is a vital task confronting our nation. We face a rare historic moment: the opportunity to shape our own strategic environment, including the behavior of our friends and foes. The role that the United States chooses to play in the world is a primary determinant of the kind of world we confront. Yet six years after the Cold War's end, no grand design has jelled. Although the Bush and Clinton administrations issued several national security strategy documents, none have received broad attention and support, either from government officials or the public at large.

This chapter puts forward a grand design to guide our military strategy and defense planning. It first describes the security environment of the world today. It then argues that the lack of a grand design is hindering America's ability to decide on a defense strategy and on

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future forces. It proceeds to present several possible grand strategies and argues that one—a policy of global leadership—will best serve the United States in the years to come. After this section, it discusses threats to the U.S. position in the world, such as the breakdown of our Cold War alliances, the proliferation of weapons of mass destruction (WMD), missiles and such new technologies as strategic information warfare that can cause mass disruption, the emergence of a global rival, and the potential for a loss of military preeminence. The final section of the essay discusses how a policy of global leadership should be carried out to meet these threats and the challenges of the coming century.

AN ERA OF U.S. PREEMINENCE

Any review of our military strategy and forces should begin with an appreciation of our strong relative position in the world today. With its victory in the Cold War, the United States is now the world's preeminent military and political power.

This surge in the relative U.S. position is the second extraordinary change in the global balance of power in this century. In the first 50 years of this century, there were two world wars and major revolutions in Russia and in China. Five empires collapsed—the Ottoman, the Austro-Hungarian, the German, the Italian, and the Japanese. Two other global imperial systems—the British and the French—declined dramatically. As a result, the character of the international system changed fundamentally. For several centuries, the international order had been characterized by multipolarity and a balance of power. No single nation had gained such a preponderance that a coalition of other states could not confront it with greater might. Although the system succeeded in preventing the emergence of a single dominant power, it ultimately failed to preserve peace. The struggle for mastery in Europe led to World War I, the rise of bloody fascist and communist dictatorships, and the horrors of World War II.

A global bipolar system followed the end of World War II. The transformation to bipolarity occurred for two reasons. First, the relative power of several key members of the old (pre–World War I) balance of power system declined dramatically. Germany was crushed by its defeat in the war, while Britain and France experienced a sig-

nificant decline. These developments coincided with the second important change: the concentration of relative power in the United States and the Soviet Union and their active engagement in global affairs.

Together, these changes produced a new international system. The distinct and, in many ways, antagonistic value systems and ways of life represented by the Soviet Union and the United States represented a special feature of the post-war era that further differentiates it from the multipolar balance-of-power era that preceded it. A revolutionary ideology and a sense of historic mission animated Moscow, while the United States sought to counter the spread of this ideology in order to defend its values and institutions. After a brief period of uncertainty, the United States mounted a determined effort to contain the spread of Soviet power. This struggle, the Cold War, took place in the context of the development and deployment of nuclear weapons, which confronted the antagonists (and others) with the possibility of unprecedented destructiveness. The Cold War ended with the sudden collapse of both the Soviet empire and the Soviet state.

Today the United States is a superpower in every sense of the word. Through more than four decades of the Cold War, the United States fielded considerable military capabilities, and today its forces are in a class of their own. Furthermore, despite a decline in its relative economic power, the United States retains the world's largest economy and remains the world's technological leader.

The U.S. model of political and economic organization also is without serious rivals. The manner in which the Soviet Union collapsed has undermined communism as an economic system and as a global ideology. The market economy—relying on free enterprise, market-based incentives, and private property—is now broadly accepted as the best path to development and prosperity. Although less widely accepted than the market-based economy, most of the fundamentals of liberal democracy are being embraced by successful nations. At present, all liberal democracies are market economies, but not all market economies are liberal democracies.

In modern times, no single nation has held as preeminent a position as the United States today. The United States today faces no global

rival and no significant hostile alliances. Most economically capable nations, including those with both high per capita and high total gross national products, such as Germany and Japan, are staunch U.S. allies. The fact that the United States achieved preeminence without a war and without causing a hostile alliance to unite against it is itself an extraordinary development in history.

In light of U.S. preeminence, the role that the United States chooses to play internationally will determine not only its own direction but also that of the rest of the world for the next century. However, six years after the end of the Soviet Union, the United States still does not have a widely shared or understood vision for the new era. Although both major political parties are dominated by internationalists, there is no consensus on an overarching national security design and even less agreement about the resources necessary to secure and advance many specific policies. Hence, particular policy initiatives are debated on a case-by-case basis.

Given the domestic problems in the United States at the time of the end of the Cold War—unsatisfactory economic growth and huge budget deficits—a shift in focus toward the home front was to be expected. However, the absence of a commitment to a new grand design has persisted despite the U.S. economic recovery and the decline of the budget deficit. Although both major presidential candidates in the recent elections were internationalists, they did not engage in a significant debate on the United States' role in the world. Therefore, the elections did not start or conclude a much-needed national debate on the U.S. role in the world in the era of American preeminence.

THE NEED FOR A GRAND DESIGN

The lack of consensus on a grand strategy—a formulation of U.S. foreign and security policy goals and the means for achieving them— hinders effective planning and policy implementation. Important coming reviews of U.S. military forces, such as the QDR and the NDP, will not be able to set a lasting long-term course for U.S. force planning unless we can settle upon a grand strategy and the overall level of resources needed to support it.

There is an underlying and widely held belief that the world in the era of American preeminence is more uncertain than in the Cold War period and that the situation has to "settle" and reveal its contours before the United States decides how to deal with it. This assumption of greater uncertainty is only partially correct. During the Cold War, the world was far from certain. Even though the enemy was known, it was never easy to predict Soviet behavior and developments around the world. "Kremlinology" was an almost mystical science, and, as developments showed, our information and understanding of what was really happening in the Soviet Union were often well off the mark. The United States prepared for conflict with the Soviets in Central Europe, but fought unanticipated wars in Korea and Vietnam, along with numerous interventions elsewhere.

Yet despite this considerable uncertainty, the United States was relatively certain of its final objectives during the Cold War. Now these are less clear. During the Cold war, we had a grand design. Today no guiding principles for conducting our foreign policy are widely accepted.

The failure of the United States to develop a new and widely embraced vision and a new grand strategy threatens to place U.S. policymakers in a reactive mode, perhaps leading them to squander fleeting, once-in-a-lifetime opportunities to shape the strategic environment. Given the powerful position the United States has in the world, it is in a position to shape the future of the world so as to enhance the prospects for freedom, prosperity and peace. But it cannot succeed in shaping our era unless it knows what shape it wants the world to take and has the strategy, the will, and the resources to make it happen.

This lack of a clear vision also endangers the achievement of even modest tasks. Specific policy decisions cannot be evaluated adequately without first constructing a framework for guiding policy and setting priorities. Absent such a framework, it is more difficult to decide what is important and what is not, to determine which threats are the most serious, and to develop coherent responses to new challenges. Short-term and parochial interests are likely to take priority over the longer-term national ones.

Without a broadly agreed-upon architectural framework, gaining widespread bipartisan support for policy also becomes harder. Sustaining popular support and staying the course for particular policies become difficult if the costs of implementation increase but if the commitment cannot be explained in terms of a compelling national interest and a strategy on which broad agreement has been achieved.

A PROPOSED NATIONAL SECURITY STRATEGY

After assessing the United States' position in the world, the QDR and NDP should examine alternative national security options open to the United States and their implications for U.S. military strategy and forces. These reviews cannot decide a new grand strategy for the United States. However, it would be prudent for them to recommend a set of enduring objectives for our national security strategy.[1]

In principle, the United States can choose among several strategic visions and grand strategies. The nation could abandon global leadership and turn inward. But isolationism is not a realistic or responsible option for the United States. Our prosperity and security depend more on the security and prosperity of other nations than ever before. Furthermore, our economic, cultural, political, and security ties to other nations are expanding. Should we withdraw from the world, the implications would be staggering. The competition to fill the vacuum would cause instability and wars. Although isolationist tendencies exist in both parties, the leaders of the major political parties—as indicated in the recent presidential elections— reject a return to isolationism.

Three realistic choices are open to the United States. First, we could seek to give up leadership by reducing the U.S. global role and encouraging the emergence of a 17th-to-19th-century-style balance-of-power structure, with each power having its own sphere of influence. Second, we might seek to share leadership with like-minded nations and lead a coalition of states—based on joint decision-

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[1]Bipartisan support will be necessary if these objectives are to become policy. In the aftermath of the recent presidential election, both the president and the congressional leaders are emphasizing bipartisanship.

making and burden sharing. Third, the United States could seek to consolidate U.S. global leadership and preclude the rise of a global rival or peer competitor as well as multipolarity.

In the near future, the global leadership option—which includes elements of leading a coalition of like-minded nations—would serve the United States' interests better than a return to multipolarity. A multipolar system risks creating several problems. First, the major powers, including the United States, may not behave according to balancing logic. For example, the logic of balance of power might well require the United States to support a nondemocratic state against a democratic one or to work with one pariah state against another. Historically, the American people have been reluctant to support such ruthless *Realpolitik* policies. Second, in such a system, the major industrial democracies might no longer see themselves as allies. Instead, politically, and possibly even militarily, rivalry could become not only thinkable but legitimate. Third, the United States would be likely to face more competition from other major powers. As military rivalry became legitimate, nations would view all issues, including trade and humanitarian aid, through the prism of the power struggle. Trading blocs and predatory trade policies would thus become more likely. Finally, there is a significant risk that the system would not succeed in its own terms. The balancing act required proved impossible even for the culturally similar and aristo-cratically governed nations of pre–World War I Europe. It is likely to be more difficult when the system is global; when the participants differ culturally; and when the participants of many states, influ-enced by public opinion, are unable to be as flexible (or cynical) as the rules of the system require. The balance-of-power system failed in the past. It is even less likely to work in the future.

Sharing leadership and leading a coalition is a more promising option than multipolarity. It is clear that the United States and its Asian and European allies face common problems: uncertainty in Russia and China; instability in Eastern Europe, the Middle East, and Southeast Asia; chaos and fragmentation in Africa; and the prolifera-tion of missiles and WMD and disruption. However, our allies have not always perceived the challenges in the same way as the United States. Should sharing leadership be adopted, the United States would have to emphasize common interests—and seek to develop a joint political and military strategy with the allies to protect these

common interests. The allies should have a greater say in decision-making in exchange for greater contribution to the costs—economic and military—of protecting common interests. Allies should also tailor their military to carry out what would be expected of each as part of a broader alliance.

For a number of reasons, a pure leadership-sharing strategy is not a realistic proposition as the dominant strategic option for the United States. First, our allies might not be willing to join a leadership-sharing strategy in the near term. Second, the allies do not today have the military capability for sharing leadership with the United States on an equal basis. The allies would like to have a greater voice in making decisions, but they are not in a position to bear the requisite military burdens. They will not be in such a position for some time to come—unless we allow our capability to decline significantly. Because the United States and its allies face common problems, it does not mean that they always have common interests and perceive the threats in the same way. The differences in threat perception combined with significantly lesser allied military capability can produce paralysis and acrimony—which could lead to multipolarity over time.

U.S. global leadership is the best of the three options as a guiding principle and vision for the United States with a gradual increase in the role of the allies over time. Such a vision is desirable not as an end in itself but because a world in which the U.S. exercises leadership is one with attributes we prefer. First, the global environment will be more open and more receptive to American values—democracy, free markets, and the rule of law. Second, such a world has a better chance of dealing cooperatively with the world's major problems, such as nuclear proliferation, the threat of regional hegemony by renegade states, and low-level conflicts. Third, U.S. leadership will help preclude the rise of another hostile global rival and multipolarity, enabling the United States and the world to avoid another global cold or hot war and all its dangers. Finally, U.S. leadership is important for continued cooperation among our democratic allies and the forging of a stronger partnership with them.

A grand strategy that ensures U.S. global leadership is a good guide for defining what interests the United States should regard as vital. Such an approach will help the United States identify threats, set

national security priorities, assess developments in various parts of the world, and decide the long-term postures of our armed forces—including deployments, presence, modernization, and readiness. It is also a good guide for long-term efforts to shape the international security environment.[2]

CHALLENGES TO GLOBAL LEADERSHIP

If the United States decides on a policy of global leadership, it must guard against challenges to its preeminence. Such challenges could come in many forms. Particularly dangerous challenges include the following:

- The alliances among the world democratic powers collapsing and the European Union (or Germany) and Japan renationalizing their national security policies. At present, this does not appear likely, but such a development is not inconceivable over the long term.

- Potentially hostile great powers, such as Russia or China, seeking and acquiring hegemony over critical regions. While there are grounds for hope that both nations will evolve favorably and play constructive roles internationally, we cannot be sure of this.

- The United States losing military preeminence. Such a loss would mean either that the U.S. military was seen as no longer qualitatively superior to major adversaries or that its ability to prevail in a diverse set of contingencies is called into question, or both.

Collapsed Alliances

Helping allies in Western Europe and East Asia become prosperous free market democracies following the destruction of World War II

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[2]Several RAND analysts have debated and discussed alternative grand strategies for the United States. See Davis (1994), pp. 135–164, and Levin (1994); also see "Strategy and the Internationalists: Three Views" (1994). The broader community's debate has included: Kennedy (1993); Huntington (1992); Krauthammer (1990–1991); the initial draft of the DoD's Planning Guidance, as leaked to the *New York Times*, March 8, 1992, p. 1.

was one of the greatest foreign policy successes in history. However, now that the Soviet Union—the common enemy that helped bring North America, Europe and East Asia together—is gone, these alliances may weaken and ultimately collapse. Such a development is not inevitable. The three regions share common interests and face common problems, but their relations also generate friction and competition. Not surprisingly, they sometimes find it difficult to work together even when it is to their joint benefit.

Some analysts assume that the alliances will inevitably end, because of an unavoidable divergence of interests. Based on economic indices, they note that the world is already made up of several great powers. Given the diffusion of wealth and technology, new great powers are likely to emerge—especially in Asia—in the next 20 to 30 years. These economic powers—including our allies—may ultimately seek political and military power commensurate with their economic strength. Many of our allies are focused on economic and trade issues, which tend to bring them into competition with one another and with the United States.

A second major problem that threatens to shatter alliances is the nature of threats in the post–Cold War environment. The common overwhelming Soviet threat has been replaced by a variety of lesser problems. The allies now often do not perceive the many threats around the world in the same way and so have been unwilling to share risks and burdens with the United States. Accordingly, this generates complaints in the United States that the allies are not doing their fair share in dealing with common problems. Many critics believe that the United States is carrying too much of the burden of defending common interests and that our allies are focused only on maximizing their economic power.

A third problem is that the alliances might become irrelevant if allies lose faith in the United States. For example, as Chinese power grows, Japan is likely to become more concerned about its security. Tokyo might seek greater U.S. support. If Washington appears hesitant or if its military capabilities begin to lack credibility, Japan might decide to appease China and move closer to it. Alternatively, it might decide to balance China and convert its economic power into greater military power and seek a leadership role for itself in Asia in competition with China. Either way, the U.S.-Japan alliance could end.

These problems have the potential to become more serious if the United States fails to provide consistent leadership. Opinion in the European nations and Japan is divided. Some seek a greater role for their nations independent of the United States, and thus are trying to lay the groundwork for a stronger and more independent defense capability—although their current capabilities are limited, and most do not appear eager to spend a lot more on defense. Others are happy to continue with the current arrangements and let the United States bear most of the burden of the alliance. Some allies are hedging against the possibility of a U.S. disengagement or decline over the long term.

The decay or fragmentation of the Cold War alliances may produce geopolitical rivalry among the major democratic powers. It will place great power relations in a greater state of flux. The Europeans might accelerate their defense cooperation and increase military spending, eventually becoming competitors to the United States. A federated Europe organized as some kind of a super-state would have even more resources than the United States because of its larger overall gross domestic product. Thus, it would be able to compete with the United States throughout the world. Or perhaps Germany might try to dominate Europe, while France and Britain ally against it. Neither alternative is desirable.

The options are different in East Asia. No serious regionwide bloc is emerging. Rather, the danger is that each state will go its own way. A weakening of the U.S.-Japan alliance would lead Tokyo to look after its own security and build up its military capabilities. At present, most of Japan's neighbors would oppose the renationalization of Japanese security policy and the growth of its military. Nevertheless, without a strong U.S. alliance, the need to balance the growing power of China and possibly Russia might compel the Japanese to reexamine their national security strategy, including their attitude on nuclear weapons. Given Japanese technological prowess, to say nothing of the plutonium stockpile that Japan has acquired in the development of its nuclear power industry, it could become a nuclear weapon state relatively quickly if it should so decide. It could also build long range missiles, build carrier task forces, militarize space, and develop a significant information warfare capability.

Hostile Hegemony Over Critical Regions

U.S. security would suffer if a hostile power or coalition gained hegemony over a critical region. A region can be defined as critical if it contains sufficient economic, technical, and human resources that, if a hostile power gained control over it, that power could seriously challenge critical U.S. interests. Three regions presently meet the criteria: East Asia, Europe, and the Persian Gulf. East Asia and Europe have tremendous technological and industrial might that, if united under one hostile power, could threaten U.S. security. The Persian Gulf is important for a different reason: its oil resources are vital for the world economy.

In the long term, the relative importance of various regions can change. For example, Southeast Asia appears to be a region whose relative importance is likely to increase if the regional economies continue to grow as impressively as they have done in the past several years. The Gulf might eventually decline in importance if the resources of the region became less important because of technological change and substitution.

At present, the risks of regional hegemony in Western Europe and East Asia are small for several reasons. First, the continued alliances between the United States and key states of these regions discourage any bids for hegemony. Second, the strength of these nations themselves is formidable and would make domination or conquest difficult. Third, potential regional hegemons, such as Russia and China, are focused largely on domestic economic development and political instabilities.

Yet caution is necessary because the future orientation of Russia and China remains uncertain. Today there is cause for optimism. One or both nations might become not only market economies but also pluralistic polities with responsible security policies toward their regions. Both governments recognize that aggressive policies could harm their economies. Yet the possibility that either nation could become aggressive remains. Both are unhappy about U.S. preeminence and might seek to become regional hegemons. Both are capable of fielding strong militaries that could pose a threat even to the U.S. homeland. The Chinese in particular are actively expanding

their military capability, including their nuclear, missile, space, and information-warfare programs.

Both Russia and China might engage in conflict along their borders. Russian attempts at regional hegemony could produce a confrontation with the United States and the West in Poland, Ukraine, or the Baltic states. Future Chinese attempts at regional hegemony could produce challenges not only over Taiwan but also over a United Korea, Japan, Russia, India, Central Asia, and Southeast Asia. As Chinese and Russian power grows, regional actors in Asia and Europe, such as Japan, Ukraine, Poland, Korea, Indonesia, and India, will face the choice of bandwagoning with Beijing or Moscow, or balancing that power by building up their own power or seeking closer ties to the United States.

In addition to the growth of Chinese power, Asia has the potential to become unstable for several other reasons. Korea is likely to unite either peacefully or by conflict in the coming years. How Korea unites will have an enormous effect on the region's future security. The region also suffers from several territorial disputes that could lead to major conflicts.

The Persian Gulf is likely to remain a flashpoint for conflict. Both Iran and Iraq seek regional hegemony, and WMD and missiles are spreading to the region. Some of our friends in the region are becoming less stable. Access to facilities in some of the countries of the area is likely to become more difficult.

Loss of Military Preeminence

Despite the U.S. military's superiority over its rivals today, America's continued military preeminence is not assured. Several factors might lead to a loss of preeminence. First, U.S. military preeminence could end if the Cold War alliances fall apart. In such a case, Germany (or the European Union) and Japan might renationalize national security, begin a rivalry with the United States, seek to exclude the United States from various regions, and develop a military capability with global reach. Second, a global rival could emerge if a critical region comes under the control of a hostile power. Third, a change in the balance of power could take place if the United States did not take advantage of new military technologies or concepts

while one or more hostile powers did. Fourth, the United States homeland could become more exposed, and we could become unable to protect ourselves. We have been vulnerable to Russian and Chinese missiles for several years, and the number of powers able to strike the United States is likely to grow.[3] Potential adversaries might also field weapons of mass *disruption*—i.e., threatening information attacks on the U.S. economic infrastructure. Fifth, a hostile nation might make a revolutionary leap in military technology. History records many such changes. Nonlinear developments, such as nuclear weapons, aviation, and computers, had dramatic effects on the military balance. Sixth, the United States could make the wrong choices in its defense plans. If the United States decreases its capabilities while confronting an increasingly hostile world, its preeminence will decrease. Seventh, the United States may get involved in a number of protracted wars, becoming overextended and sapping its energies. In such an environment, the nation may turn inward and pay less attention to threats from abroad. Eighth, the United States might lose military preeminence if its economy falters. In such a case, defense budgets would come under increasing pressure.

A STRATEGY FOR GLOBAL LEADERSHIP

Elements of global leadership include the following:

- Maintaining, adapting and strengthening the alliances among the world's democratic powers by creating a global partnership.

- Preventing hostile hegemony over critical regions. We should remain the security manager in the Persian Gulf and hedge against possible Russian reimperialization and Chinese expansionism, while promoting market economics, political democratization, and responsible national security policies in these countries.

- Preserving U.S. military preeminence now and in the future, to shape the international environment.

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[3]Ironically, the desire of many states to acquire WMD might increase because of U.S. preeminence. Opponents will seek to deter U.S. involvement or raise the costs of U.S. intervention by threatening the U.S. homeland.

- Bolstering U.S. economic strength and an open international economic system.

- Becoming more judicious in our military involvement in order to avoid overextension.

- Broadening and solidifying domestic support for a strategy of positive U.S. global leadership.

A Global Partnership Among Democratic Allies

The absence of a common Soviet threat complicates the task of maintaining our alliances. Nevertheless, the continuation of these alliances is vital for the protection of American and allied interests. Maintaining the alliance among the world's major democracies requires, first and foremost, avoiding conditions that can lead to "renationalization" of security policies in key allied countries. The U.S. alliances can be undermined if the most powerful members believe that the current arrangements do not adequately address threats to their security. It could also be undermined if, over an extended period, the United States is perceived as lacking either the will or the capability to protect their interests.

For now, the alliances are strong, but challenges to them will be substantial. In addition to hedging against the possible reemergence of a hostile Russia, Europe faces many diverse security threats. The near-term security threat to Germany comes from instability in East-Central Europe and, to a lesser degree, from the Balkans. For France and Italy, the chief threats come from conflicts in the Balkans and in North Africa, particularly if Islamic extremism and WMD spread into that part of the world. For now Germany is focused on integrating the former East Germany and favors working with the United States in its attempts to expand North Atlantic Treaty Organization (NATO) in East-Central Europe. This pro-U.S. policy stems from the confidence Germans have in the United States and in part because an alliance-based policy is cheaper for Germany than a unilateral approach. In East Asia, too, Japan favors working with the United States to overcome concerns about Russia, future Chinese military capabilities, and the threat of nuclear and missile proliferation on the Korean peninsula. As long as the United States remains willing and able to lead efforts to protect their vital interests, these nations are

less likely to look to unilateral means. In short, U.S. power and a willingness to lead are necessary to preserve the current high level of cooperation among the world's leading democracies.

The United States and its allies should evolve their current regional and bilateral alliances into a U.S.-led global partnership. This should involve identifying common interests around the world, threats to those interests, a joint strategy about what partners should seek, and an assessment of who will bring what to the table. In Europe, these interests can be best served if NATO remains the primary entity to deal with the challenges emerging in the south and east. To perform this role, NATO must maintain a robust military capability as a hedge against the possibility of unfavorable developments in Russia, prepare East and Central European nations for the duties of membership, and develop the capability to deter and defeat threats from the south. The United States would need to maintain for an indefinite period a significant military force on the continent—both to provide a basis for combined training, planning, and command and to demonstrate U.S. commitment and resolve. But the location, composition, and numbers involved should be reviewed as part of the evolution toward this new global partnership.

Asia has no NATO-like multilateral alliance: The core security relationships are the U.S.-Japanese and U.S.-South Korean alliances. To deal with the potential challenges in Asia, the United States, Japan, and Korea must design a joint strategy and a new Asian partnership that is open to new members from Southeast Asia that share our goals. Threats to East Asia include possible aggression by North Korea and uncertainties about the future directions of China, Russia, and India. As in Europe, the United States must review its military requirements and deployments in the light of new needs and contribution from the our partners.

Efforts to build a new global partnership could start with North America and Western Europe cooperating on Eastern Europe and the Greater Middle East. But such a move must be part of a larger strategy that includes an American–East Asian partnership focusing on Asia. The ultimate goal is to bring the two partnerships together in a U.S.-led global alliance among the world's major democracies. The North Atlantic Treaty Organization should ultimately become the North Atlantic and East Asian Treaty Organization (NAEATO). The

potential members of NAEATO have common interests in the stability of Europe, North America, East Asia, and the Persian Gulf. Japan, for example, imports oil from the Gulf and exports to and invests in the other critical regions. The same is true of Europe.

Although the U.S. global role benefits its allies, other members of NAEATO may not do their fair share. This was a problem during the Cold War, and it is unlikely to go away. We face a dilemma: As long as we are able and willing to protect common interests, others might allow us to assume a disproportionate share of the burden, thereby keeping political opposition under control, accepting no risk for their youth, and continuing to focus on their economies. But it is in no one's interest for our allies to be able to conduct large-scale expeditionary wars without U.S. participation. Such a capability might alarm their neighbors and will erode the margin of U.S. military superiority. In short, a balance is required. Although the United States will have to bear a heavier military burden than its allies, fairness and long-term public support require that this proportion not be excessive. In the Gulf War, a substantial degree of burden sharing was realized. The same is true in Bosnia. But the allies can do more, even though they are likely to resist such calls. For the long term, one possible solution is to institutionalize burden-sharing among the G-7 nations for the security of critical regions including sharing the financial costs of military operations. Burden sharing comes with a political price for the United States: It will place constraints on U.S. policy, as our allies will want a greater voice than they have had in the past in U.S. decisionmaking.

Precluding Hostile Hegemony Over Critical Regions

To preclude hostile hegemony, the United States needs to shape the security environment by providing a stabilizing presence and demonstrating its resolve. To deter the rise of hegemons in critical regions, we must have the capability to defeat and roll back their aggression should deterrence fail.

At present, the United States is the preponderant outside power in the Persian Gulf. Our role as the region's security manager deters hegemony and allows us to resist any future encroachment in the region by possible global rivals. As their economies grow, Asian powers, such as China and India, may become more dependent on

the Gulf for energy. U.S. preponderance also serves the interests of our democratic allies because it ensures the free flow of oil from the region. Yet our allies bear little of the burden for the region's defense. We must insist that they do more to contribute to the region's security as we discuss and negotiate new partnership arrangements.

The United States and its allies have a substantial interest in helping Russia and China become "normal" countries, i.e., countries that accept and seek regional stability. Ideally, they would become prosperous, free-market, western-style democracies that cooperate with the United States in meeting current and future challenges. Whether Russia or China will succeed in becoming a normal state is difficult to predict, but the stakes justify a major Western effort. Nevertheless, the key determinants are Russian and Chinese domestic politics, over which we have limited influence.

As we encourage Russia and China to work with us to reduce regional tension, we also need to reduce any incentives these powers might have to engage in aggression. Thus, it is in the U.S. interest that Ukraine, Taiwan, a United Korea, Vietnam, Kazakhstan, Uzbekistan, and other neighbors of China and Russia are able to make any attempts at regional hegemony very costly and therefore deter such attempts. This should not mean that the United States wants hostile relations among Moscow, Beijing, and their neighbors in Europe and Asia. Good economic and political relations between Russia, China, and their neighbors are not inconsistent with U.S. interests (see Brzezinski, 1994). But consolidating Ukrainian and Uzbek independence—as well as that of the other newly independent states— should be a primary U.S. objective as well.

To discourage Russian aggression against Ukraine and the Baltic states, NATO must make it clear to Russia—and must convince its own publics and parliaments (including the U.S. Congress)—that such an action would lead to a cutoff of economic assistance to Russia, to fast-track NATO membership for other nations of East-Central Europe, and possibly to material support to Ukrainian and other resistance movements. Without such preparations now, there is the danger that, in the face of a possible Russian threat to Ukraine, NATO expansion to East-Central Europe would not be politically supported because it would appear to be too provocative.

Unfortunately, at times in the past, we have appreciated our stakes too late to express them clearly enough to deter an aggressor (Davis, 1994, p. 197). A clear and firm Western posture now would also strengthen those Russians who do not consider reimperialization to be in their country's interests.

How China defines its role as its power grows is one of the key questions of the coming era. China appears even more dissatisfied with the status quo than Russia. Beyond Hong Kong and Macao, which will be ceded to China by the end of the century, it claims sovereignty over substantial territories that it does not now control, such as Taiwan, the Spratly Islands and the South China Sea generally, and the Senkaku Islands. Such claims suggest China appears to be seeking eventual regional predominance, a prospect opposed by Japan, Russia, India, Indonesia, and other regional powers. Even without regional domination, China might seek to lead an anti-U.S. coalition, rejecting U.S. leadership generally or particular policies, such as nonproliferation and human rights. Such a stance is already evident in its assistance to Pakistani and Iranian nuclear programs.

For the near term, economic considerations are likely to dominate Chinese calculations. Chinese economic success, however, confronts us with a dilemma. On the one hand, it can increase China's potential for becoming a global rival. On the other hand, it might foster democratization and a cooperative China.

Even today China by itself or as the leader of a coalition of renegade states could increase the global proliferation problem. Thus, it is not in the U.S. interest to cut off ties with China or to isolate it completely. Washington should continue to pursue economic relations with China and encourage its integration into global economic, political, and security regimes. But we should use the leverage of economic relations to encourage China's cooperation on restraining nuclear and missile proliferation in such places as North Korea and Iran.

Yet keeping ties to China does not mean coddling it. Thus, as we trade with China, we should be cautious about transferring technologies that can have important military implications. To discourage Chinese expansionism, we should also ensure that China's neighbors have the means to defend themselves. We should also

support moves to reduce Taiwan's international political isolation. Finally, we should preclude Chinese regional hegemony by maintaining adequate forces both in the region—both permanent and rotational—and available for rapid power projection.

Preserve American Military Preeminence

For America to maintain its military preeminence, our forces and doctrine must have the following characteristics: the capability to prevail in a diverse set of contingencies, the means to counter asymmetric threats, advanced capabilities that permit increased reliance on information and precision firepower, and the ability to hedge against the unexpected.

Prevailing under diverse circumstances. U.S. forces must be able to prevail in a diverse set of contingencies—a set that is broader and more realistic than those that have informed recent defense reviews such as the Base Force and the Bottom-Up Review. These scenarios—a North Korean attack on South Korea and an Iraqi attack on Kuwait and Saudi Arabia—are realistic near-term challenges in two critical regions, even though they make important favorable assumptions about the time available for the United States to respond and the use of missiles and WMD. We must continue to have the capability to win simultaneous wars in the Gulf and Korea. But the two scenarios used by DoD are not fully representative of the likely challenges we would face both in the near and the longer terms. For the near future—between now and 2005—the following scenarios should inform our military posture in terms of combat:

1. Demanding variations of the Iraq (or Iran) versus Kuwait and Saudi Arabia scenario. The scenario should include the problems of short warning, access restrictions, limited allied support, and the capability to deliver WMD.

2. A Chinese attack on Taiwan that involves concerns about mainland sanctuary paucity of nearby bases, WMD capabilities, a nuclear threat to the U.S. homeland, and short warning.

3. An internal conflict in a country where important U.S. interests are at stake and that involves a large number of potential hostages.

4. Variations of a North Korean invasion of South Korea that include short warning and the threat and use of WMD.

5. A Mexican internal conflict scenario that includes the collapse of government, massive refugee flows to the United States, and a threat of a takeover of the government by anti-U.S. forces.

6. A "Bosnia II" scenario, which might follow a breakdown of the Dayton accords and involve a return of conflict and Serbian support for the Bosnian Serbs.

Current U.S. capabilities are substantial and should be able to deal successfully with most of these challenges even if some are in combination and if they occur only weeks apart. But we can improve our ability to meet these challenges by enhancing capabilities to detect short-warning combined-arms offensives, to defend against WMD and their delivery vehicles, and to deal with military challenges of a less-than-all-out nature, such as insurgency, subversion, and factional fighting.

Asymmetric strategies. We must increase our ability to deal with "asymmetric" strategies by our regional adversaries. U.S. military preeminence will lead potential challengers to avoid direct conflict or to try to keep the United States out of a conflict. Such strategies could include the use of WMD or terrorism to threaten the U.S. mainland or striking "high value" targets, such as ports and bases before we arrive.

Deploying advanced capabilities. To maintain U.S. military preeminence for the longer term—2010 and beyond—we should lead the revolution in military affairs both in terms of new weapons and in terms of concepts of operation. New technologies with regard to information, reach, delivery, and precision can change how wars are fought and the requirements of deterrence. To maintain U.S. military superiority in the long term, maintaining the U.S. lead in new weapons and their use is critical. Evident U.S. technological dominance can play a strong role in shaping the minds of potential adversaries. Therefore, we should give higher priority to research on new technologies, new concepts of operation, and changes in organization. The Gulf War gave us a glimpse of the future of war. The challenge is to sustain our lead.

Our rivals are likely to be very motivated to explore new technologies and how to use them against us. A determined nation making the right choices, even with a much smaller economy, could pose an enormous challenge. For example, Germany, by making the right technical choices and adopting innovative concepts for their use in the 1920s and 1930s, was able to make a serious bid for world domination. At the same time, Japan, with a relatively smaller gross national product than those of the other major powers, especially than the United States, was at the forefront in the development of naval aviation and aircraft carriers. These examples indicate that a major innovation in warfare can provide ambitious powers an opportunity to become dominant powers. Dominating the emerging military revolution, combined with maintaining a force of adequate size can help discourage the rise of a rival power by making potential rivals believe that catching up with the United States is a hopeless proposition.

Hedging against uncertainty. Given the rapid pace of change in the world, countries that are not now hostile could become adversaries. The world can be more peaceful if Russia and China have become responsible democracies and have joined the American-led global partnerships. In such a case, the challenges we face would likely be smaller compared to U.S. and allied capabilities. Alternatively, we may face bigger threats if these or other nations become aggressive. Given the uncertainties, we should use the following difficult scenarios to inform our thinking about military developments, in the longer-term future:

1. Iran invades Kuwait and Saudi Arabia with short warning. The United States faces access restrictions, WMD use, and weapons of mass disruption threats against the U.S. homeland and space systems.

2. China attacks a united Korea and threatens the U.S. homeland if the United States aids Korea. In such a scenario, access to the region might be limited, warning time short, and the WMD threat profound. We should consider cases where we have support from Japan and selected nations in Southeast Asia, as well as cases where such support is lacking.

3. Russia attacks Poland while NATO supports Poland. Again, there is limited warning and the threat of nuclear use. The United States must also be able to coordinate its military tasks with those of the alliance.

The intention of the above scenarios is to inform our judgments about the more potent hedges against unforeseeable dangers and to recognize the uncertainty inherent in any military situation. If we can develop forces robust enough to handle these difficult scenarios, they should be capable of meeting most of the challenges we will face in the future from large-scale aggression.[4]

Preserve U.S. Economic Strength and an Open International Economic system

The United States is not likely to preserve its military and technological dominance if the U.S. economy declines seriously. In such an environment, the domestic economic and political base for global leadership would diminish, and the U.S. would probably incrementally withdraw from the world, become inward-looking, and abandon more and more of its external interests. As the U.S. weakened, others would fill the vacuum.

To sustain our economic strength, we must maintain our technological lead in the economic realm and deal responsibly with our budget problems. In the past, such developments as the agricultural and industrial revolutions produced fundamental changes in the relative power of nations (Mokyr, 1990). We might be in the middle of another transformation based on the information revolution. If the United States fails to recognize the change and adapt its institutions, its relative position may decline.

To remain the preponderant world power, U.S. economic strength must be enhanced by improving productivity, strengthening education and training, and generating and using superior science and technology. Two other factors also shape our economic health. One is the chronic imbalance between government revenues and gov-

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[4]Some of the points here regarding military challenges of the new era are also discussed in Chapters Three and Four of this volume. See also Davis (1994).

ernment expenditure. Second, and even more important to our economic well-being over the long run, may be our overall rate of investment. Although the U.S. government cannot endow its citizens with a Japanese-style propensity to invest, it can use tax policy to encourage such a development.

Global leadership serves our economic interests. For example, it can facilitate U.S. exports, as we have seen recently in U.S. contracts with Saudi Arabia for the sale of aircraft and the modernization of Saudi telecommunication systems. Moreover, the costs of alternative strategies will ultimately be higher than those associated with U.S. global leadership.

Remaining Selective and Judicious in Our Military Involvement

The United States needs to be more selective about its involvement in lesser regional conflicts (LRCs)—internal conflicts, small wars, humanitarian relief, peacekeeping or peacemaking, punitive strikes, restoring civil order, evacuation of U.S. citizens, providing security zones, and monitoring and enforcement of sanctions—and to develop some specific capabilities appropriate for such conflicts (Builder, 1994; Kassing, 1994; and Lempert et al., 1992). Given the end of the Cold War, the Untied States can be more selective in its military involvement around the world. LRC involvement can prevent the United States from responding promptly to simultaneous MRCs. LRC involvement could also lead to protracted war which could undermine support for U.S. engagement abroad and bring about overextension.

For lesser contingencies of marginal value to U.S. interests, we should rely on options other than the use of U.S. forces. Options that we should consider include: arming and training the victims of aggression—an option precluded in Bosnia when we agreed to a United Nations arms embargo—providing technical assistance and logistic support for peacekeeping by regional organizations or friendly powers; a more proactive diplomacy to avert crises and conflict; resisting the adoption of unrealistic objectives, such as nation building in Somalia; avoiding actions that increase the prospects for military intervention later on, such as the economic embargo in

Haiti; and greater will and discipline by the political elite in resisting calls for military intervention in crises that are of marginal interest to the United States.

Obtaining and Maintaining Domestic Support for U.S. Leadership

Some might argue that the American people will not indefinitely support a global leadership role for the United States, particularly if domestic priorities are in competition for the same dollars. Public opinion polls indicate that people in the United States are focused on domestic concerns. Such a perception discouraged a serious debate on national security issues in the last two presidential elections.

The degree to which the public will in fact support a global strategy as outlined here is not known for certain. But the public is more likely to support it if it is presented to them by the president and supported by the senior members of both the Democratic and Republican parties and if the costs and benefits of such a strategy and some alternatives are more widely debated and better understood. Global leadership will entail costs—a greater defense effort in the near term than would be the case if the United States were to adopt some other grand strategy—but those costs have to be compared with the potential risks and long-term costs of the alternatives. The costs of alternative approaches can ultimately be higher. At present, the burden imposed by our defense efforts, around 3.5 percent of the gross national product, is lower than at any time since before the Korean war. The burden will decline to 3 percent as economy expands. Such a level of defense effort for maintaining global leadership should be sustainable.

CONCLUSIONS

This is a time for the United States to define more clearly a role for itself in the world. Making the right decisions now is essential. As subsequent chapters in this volume suggest, the military forces needed to carry out a U.S. global leadership strategy should be affordable, provided that the right decisions are made. Support elements and force structure can be adjusted to free resources for needed recapitalization. Resources also can be saved by adopting

more efficient business practices in DoD, eliminating unneeded units, and being more selective in U.S. deployments for peacekeeping and peacemaking operations. More effective burden-sharing among the democratic allies also will reduce the costs of leadership.

On the other hand, a failure to make the right decisions on future forces or inadequate resources for national defense would necessitate a change in strategy. A gap between strategy and capability will be dangerous for the nation. Such a gap could lead us to make security commitments that we are unable to fulfill and perhaps even to undertake military tasks we are unable to complete. It could set the stage for a major military disaster. Even more important, as a nation, we would have failed to seize a historic opportunity.

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THE CONTEXT FOR DEFENSE PLANNING: THE ENVIRONMENT, STRATEGY, AND MISSIONS

David Ochmanek and Steven T. Hosmer

"Form follows function." This elegantly simple axiom provides the philosophical foundation for much of modern architecture. It applies as well to the planning and development of military forces. Nations field military forces to provide the capabilities they believe are needed to defend and advance their interests. Changes in the planning environment—encompassing new threats, opportunities, constraints, technological advances, and other factors—prompt nations to adjust both their strategies for dealing with that environment and their military posture.

This chapter provides a context for developing U.S. defense strategy and forces to meet the challenges of the next two decades or so. As such, it serves as a basis for much of what follows in this volume. It is no secret that this context has changed in important ways in recent years. The disappearance of the Soviet Union has brought about a sea change in the geopolitical environment, and equally profound changes are emerging in the technologies of warfare, as evinced by the performance of U.S. forces in Operation Desert Storm.

If so much has changed, why do our forces (and their support structure) look so much the same? Part of the answer is that there is a certain continuity in what military forces are called upon to do. Indeed, the operational arts practiced by the military services have not changed in most important ways since the end of World War II. The Air Force is still called upon to provide and exploit superiority in the medium of the air, the Navy on the seas, and so forth. Nevertheless,

given the profound geopolitical and technological changes that have occurred and are occurring, it is essential that we carefully assess both the purposes of military power in U.S. national security and the best means for providing it.

This chapter approaches this subject from a "top-down" perspective. That is, it begins this assessment by identifying the nation's most basic objectives. It then examines factors in the international environment—threats and challenges, opportunities, and constraints—that bear upon those objectives. An appreciation of these factors and of the ways in which they might affect national objectives underlies the formulation of the national security strategy. This strategy, which has political, diplomatic, and economic, as well as military, dimensions harnesses the nation's resources to protect and advance national objectives in the face of challenges and opportunities that emanate from beyond our nation's borders.

A more-detailed examination of these national objectives and the threats that might endanger them permits one to define defense strategy and to identify the missions that U.S. forces must be prepared to conduct. It also helps to focus planning on specific regions and potential conflicts that might arise. Figure 3.1 shows this contextual framework in schematic form.

The remainder of this chapter fills in this framework with observations and judgments about the current and future planning context.

Of course, strategists and planners can never be certain of what the future might bring. History shows that even the most experienced observers frequently fail to predict major events in their areas of expertise. Misreading the future can be a problem, given that many decisions, such as whether to develop a certain weapon system, can affect force structure and capabilities for decades. For some defense planners, the "uncertainty" of the world that has evolved since the end of the Cold War constitutes a major impediment to effective planning. This concern over uncertainty is frequently overdone. In fact, there are good reasons for believing that the uncertainties inherent in today's world need not stymie defense planning.

First, those who lament the uncertainties we face today seem to presume that we dealt with less uncertainty during the Cold War. A
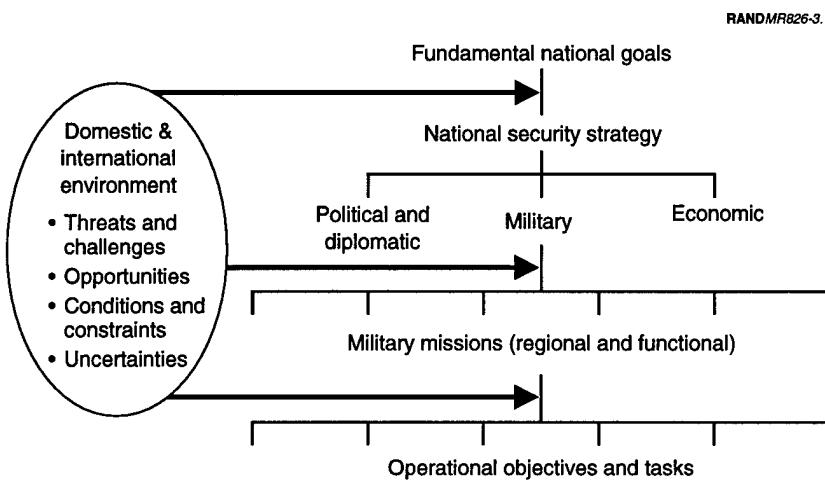
Figure 3.1—Planning Framework, Planning and Uncertainty

common claim is that, in the Cold War, at least we knew who our enemy was. This nostalgia for the certainties of the Cold War era is not warranted. While defense planners thought they knew whom we would be fighting, and planned as if they knew, in fact the United States was drawn into conflicts and had to face major international developments that were generally unforeseen:

• In early 1950, no one in Washington thought that the nation would be engaged in a war in Korea for the next three years.

• Later in the 50s, we expected that future wars could be deterred by the threat of overwhelming nuclear retaliation. Much of our force structure was planned accordingly. Next thing we knew, we found ourselves with half a million troops fighting with old fashioned bullets in Southeast Asia.

• In the late 80s we continued to build Future Years Defense Plans as if the Soviet Union would remain a global rival with powerful and modernizing military forces. Wrong again.

The second thing wrong with focusing unduly on uncertainty in the planing environment is that doing so deflects attention from impor-

tant things about the future that we do know. It is a central premise of this chapter—and, indeed, the entire volume—that we know enough about the future to do a decent job of planning. After all, our defense posture should be able to accommodate uncertainties. We can get important things wrong in our picture of the future and still do the right things in our defense establishment. Specifically, we can identify high-priority needs for future military capabilities without knowing in detail where or when those capabilities might be employed. The key is to shift the focus away from trying to predict discrete events and toward the identification of important, enduring missions.

As evidence, consider the force that so soundly defeated Iraq's military forces in Operation Desert Storm: Ours was a force designed, built, and trained largely to fight a different enemy on a different continent, under very different conditions and constraints. The lesson here is that in the presence of uncertainty (which is another way of saying "always"), planners ensure that the scenarios they use to shape and assess their programs capture a broad range of challenges that might arise. (At the same time, it would be folly to act as if all possible future challenges are equally likely or important. Choices must be made and priorities must be set.)

The third reason not to overemphasize uncertainties is that doing so can lead both strategists and planners to become reactive and passive. To be sure, sound strategy must be formulated in the context of an appreciation of the major forces at play in the environment in which the strategy will operate. But strategy is about more than coping with a fixed set of conditions and fitting one's resources to a given environment. A key function of strategy is to shape that environment in directions helpful to one's own interests.

This is especially true for U.S. military planners, who work, after all, for a government that controls the most powerful military forces on the planet. Too often, those engaged in trying to predict the future environment forget that their own actions constitute an important variable. While we may be uncertain about the future course of events, we can identify with great clarity those things that we do and do not want to happen, and our strategy is, in part, directed toward ensuring that desired outcomes occur and undesired ones do not occur. Finally, we must accept that we will be uncertain about some

things that bear on our planning, but we do not need to be uncertain about what those things are. This is key: A disciplined assessment of what knowledge is needed for strategy and planning allows one to eliminate from one's worry list a large number of things about which one is uncertain. Only a limited number of things really matter to a defense planner, and he or she usually knows a lot about many of them. Starting from this foundation, uncertainty becomes manageable.

So let us begin by agreeing that we will not be transfixed by the obscurity of the future, that sound planning can (nay, must) take place in the presence of some irreducible uncertainties, and that none of this is new or unique to the times in which we are living.

FILLING IN THE FRAMEWORK: NATIONAL OBJECTIVES, ENVIRONMENT, AND STRATEGY

Strategy begins with national objectives (sometimes called national interests). There should be no uncertainty about the fundamental objectives of the United States: They are the basic responsibilities of our government, and they have not changed significantly since the founding of the Republic. Simply put, they are to secure for Americans "the unalienable rights of life, liberty, and the pursuit of happiness." Stated in more operational and less eloquent terms, our national goals are to

- Protect the lives and personal safety of Americans, both at home and abroad

- Maintain the sovereignty, political freedom, and independence of the United States with its values, institutions, and territory intact

- Provide for the well-being of the nation and its people.

Securing these most basic objectives is the ultimate goal of both domestic and foreign policy.

The United States has also long evinced an interest in the well-being of other peoples. This has led our country to lend humanitarian assistance to the victims of natural and manmade disasters abroad and to attempt, frequently albeit fitfully, to prevent flagrant and sys-

tematic violations of human rights in foreign countries. While the United States should not always and everywhere intervene to prevent repression or human suffering, enhancing the well-being of other peoples will remain an important concern of Americans.

Having stated fundamental objectives, it becomes somewhat easier to identify the next set of things that matter to planners: the challenges, opportunities, and constraints that might affect those objectives. That is, what forces will be working both for and against us as we try to secure and advance our objectives? What are the "givens" in the environment that we must accommodate, at least in the short term? At the level of the national security strategy, it is necessary to consider the full range of challenges and opportunities that might arise from beyond our own borders, whether they be of a political, economic, or military nature. The lists of challenges, opportunities, and constraints that follow lie somewhere between the illustrative and the comprehensive.

Challenges and Threats

U.S. national security strategy should concern itself with the following challenges over the coming decade and beyond:

- Policies that unfairly limit U.S. access to important markets or resources; predatory trade practices, such as dumping

- Governments that seek to impose their will or establish hegemony in areas of interest to the United States, especially when such governments rely on the threat or use of force

- The spread to such governments of technologies and weapons that could threaten the United States, upset regional balances, and/or substantially raise the costs and risks of U.S. military operations; especially salient are weapons of mass destruction (WMD)—nuclear, chemical, or biological agents

- Large-scale failure of economic, social, or political systems, leading to human suffering, mass migration pressures, and the need for external intervention (e.g., disaster relief and peacemaking operations)

- Conflict fomented by subnational groups as a result of ethnic, tribal, or religious hatred

- Challenges to pro-Western governments by radical opposition groups, including militant Islamic extremists in Moslem countries and authoritarian groups in formerly communist countries

- International terrorism, including the potential for terrorist groups to acquire WMD

- Deterioration of the global environment, especially through irresponsible industrial policies and rapid population growth; scarcities of key resources (e.g., water, arable land) in developing areas

- Growing dependence on potentially vulnerable information and data-management systems.

Opportunities and Favorable Trends

At the same time, U.S. strategy should recognize and seek to capitalize on the following opportunities:

- The collapse of communist ideology and the abandonment of communist authoritarianism by most states of the former Soviet empire; the acceptance, by some of them, of democratic and free market principles

- The continued vitality of the U.S.-led alliance structure; the high levels of economic and military potential held by the United States and its allies

- Widespread acceptance of democratic governance and market economics

- Growing access to alternative sources of information by people in countries ruled by oppressive regimes

- Expanding free trade

- Technological advances

- Progress toward the resolution of selected, long-standing disputes (e.g., Arab-Israeli, Northern Ireland).

Constraints

Finally, the U.S. ability to advance its objectives in the coming years will be limited by the following constraints:

- Growing pressure on discretionary spending resulting from the need to eliminate the federal budget deficit

- Limited economic growth

- Limited public support for expenditures on defense, overseas involvements, and foreign assistance

- Lack of consensus on the extent to which U.S. interests are at stake in particular conflicts or crises

- Deepening interdependence among the industrialized economies and societies[1]

- Continued dependence by the United States and most other industrialized nations on imported petroleum

- Limits on the ability of other states and transnational institutions to enforce compliance with international norms.

Trends

The magnitude and direction of most of these trends are well known. Figures 3.2 through 3.4 and Table 3.1, however, offer some details. Figure 3.2, for example, shows that the United States is projected to continue using large quantities of petroleum—upwards of 20 million barrels per day—and importing about 40 percent of it. Hence, the Persian Gulf—the repository of most of the world's exported petroleum—will continue to be a region of great significance to the United States and the rest of the industrialized world.

Figures 3.3 and 3.4 show the important part international trade plays in the economic prosperity of Americans. Today, approximately 17

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[1]Some might vote to place this into the "challenges" list, some the "opportunities" list. However one regards the growth of interdependence, it is a reality that can only be escaped at great cost (i.e., reduced economic prosperity, growth, and competitiveness).

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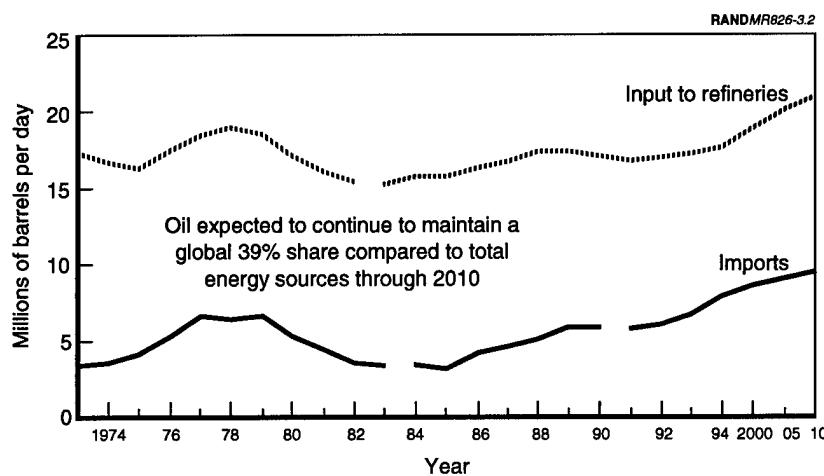
SOURCE: U.S. Department of Energy (1994,1995).

Figure 3.2—Petroleum Imports Versus Total U.S. Consumption

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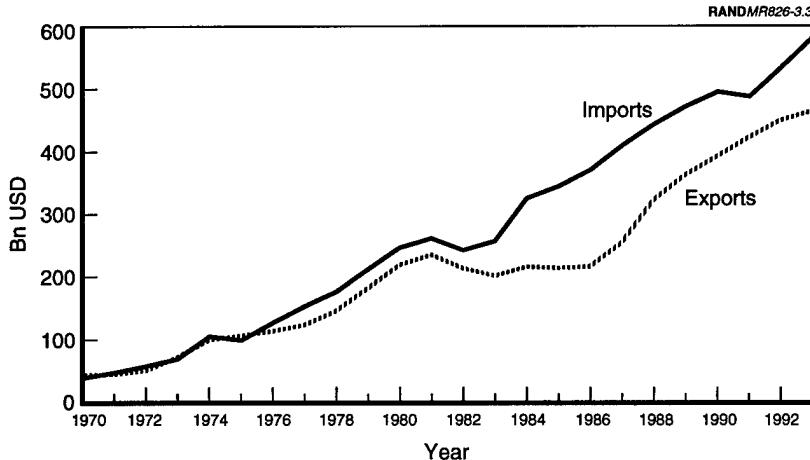
SOURCE: U.S. Department of Commerce (1994).

Figure 3.3—Value of U.S. Imports and Exports, 1970–1993

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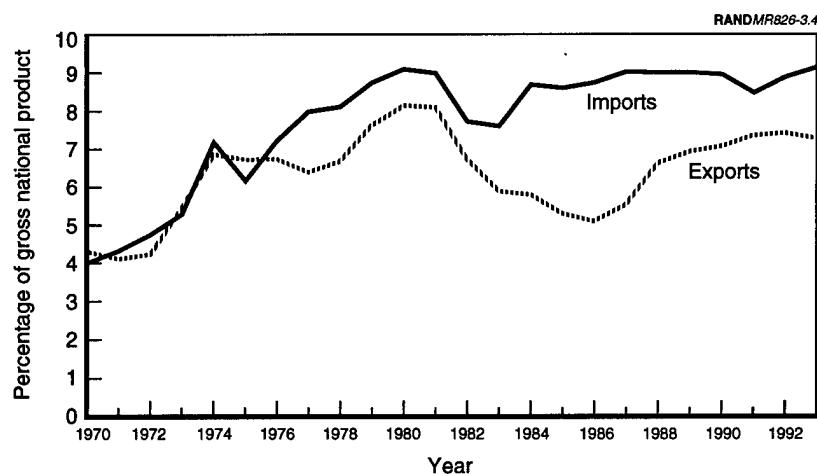
SOURCE: U.S. Department of Commerce (1994).

Figure 3.4—The Importance of International Trade

Table 3.1

**U.S. Citizens Residing in Selected
Foreign Countries**

Location	Number
Argentina	13,000
Costa Rica	62,000
Dominican Republic	97,000
Egypt	17,000
Hong Kong	24,000
Jerusalem	43,000
Mexico	539,000
Panama	36,000
Saudi Arabia	40,000
South Korea	30,000
Venezuela	24,000

SOURCE: U.S. Department of State, 1992.

percent of the U.S. gross domestic product is accounted for by imports and exports. The significance of this figure is magnified by the fact that several of the most dynamic sectors of our economy— electronics, telecommunications, aerospace, and others—are either among our leading export industries or are highly integrated in international production processes, using numerous components produced abroad. When combined with an appreciation of the growing internationalization of the world's capital markets, it becomes clear that no U.S. government can provide for the material well-being of Americans without regard to events and trends beyond our borders.

Table 3.1 shows official estimates of the number of American citizens residing permanently in a sample of foreign countries. It suggests not only that the U.S. government must be concerned about the stability of these regions, but also that our military forces must be capable of responding rapidly to potential threats to the safety of large numbers of Americans in numerous overseas areas.

Degrees of Uncertainty

In light of these challenges, opportunities, and constraints, U.S. leaders formulate a national security strategy that provides guidance about how the nation will harness its resources toward securing and advancing its objectives. As noted above, that strategy must be designed to accommodate uncertainty. Taking a time horizon of the next two decades, we can identify, with varying degrees of confidence, a number of potential developments and threats pertinent to the development of this strategy.

First, we know that we are likely to confront regional adversaries— such as the governments of Iraq, Iran, Libya, Cuba, and North Korea today—that are unremittingly hostile and that will work actively and, if possible, violently, to reduce U.S. influence. Each of these states has sought to destabilize its neighbors and has sought to acquire WMD. This list of known current adversaries, while probably not complete, is nevertheless impressive for its brevity: There are not that many countries in the world of the near future that are working hard against our interests across the board. Moreover, it is quite possible that one or more of these regimes will be replaced within the

next decade, as several face severe economic problems and internal opposition.

The threats Iraq and North Korea pose have played a particularly prominent role in U.S. defense planning since the end of the Cold War. Although scenarios invoking aggression by these states have been used illustratively, not predictively, to assess the capabilities of U.S. forces, they have taken on unintended significance as observers have come to regard them as the basis for the bulk of our force planning. Consequently, should one or both of these threats dissolve, either as a result of the collapse of the regime in Pyongyang or a radical change of government in Baghdad, pressure would build in the United States for significant additional cuts in defense spending.

Experience suggests that defense cuts enacted in response to a more "benign" international environment would not be restored promptly in the face of an evolving hostile environment. In the past, the United States has required a "triggering" event, such as Pearl Harbor in the case of World War II and the invasion of Korea in the case of the Cold War, to energize mobilization and rearmament. While the United States eventually prevailed in World War II and forced a stalemate in Korea, a future triggering event could prove costly militarily and endanger important U.S. interests.

Consequently, U.S. defense strategists and force planners would be well advised to begin now to broaden the conceptual basis for planning and assessing forces and to reflect that broader conceptual basis in their public statements. In addition, to hedge against the possibility of severe budget cuts in the future, planners will need to design force structures, acquisition programs, and research and development efforts that can maintain the nation's most essential military capabilities in lean times, while preserving a foundation for rapidly reconstituting forces when a triggering event or a widely perceived deterioration in the international environment prompts a renewed defense buildup.

It is also possible that other nations could move into the category of adversaries. Most importantly, we do not know the future orientation or military capabilities of two important actors: Russia and China. Twenty years hence, either could be ruled by a generally amicable government that is content to advance its national interests by

peaceful means, or by a hostile regime that aggressively pursues objectives that endanger the interests of the United States and our allies. The latter possibility must be given particular weight, in that both countries have, at one time or another in their histories, manifested expansionist ambitions. The course of reform in these two giants is only marginally susceptible to influence from without.

In any case, we do know that both Russia and China will retain (and, in China's case, increase) the capability to threaten our homeland with nuclear weapons. We also know that, while neither Russia nor China will have conventional military capabilities sufficient to challenge U.S. forces effectively outside of their regions, their regional power-projection capabilities will remain sufficient to threaten their neighbors. How imposing these conventional forces become will depend heavily on the political makeup, economic development, and technological capabilities of the two powers and on the levels of resources their governments will choose to invest in their military establishments.

Finally, our uncertainty about the future orientation of Russia and China has important second-order effects: U.S. efforts to deter or defeat regional adversaries will be more difficult in a world where either Russia or China lends political or material support to such adversaries, both in peacetime and during conflict.

We also do not know the future orientation of other states that today share many U.S. interests. Most notable among these are Algeria and Egypt and, perhaps, some of the states of the Gulf Cooperation Council. If current governments there are toppled and replaced by virulently anti-Western elements, the successor regimes could make things much more difficult for us in the Middle East and the Gulf. Likewise, we cannot be certain that Mexico will continue to develop along stable and otherwise desirable lines. The consequences for the United States of serious economic failure or political violence in Mexico would be immediate and far reaching.

We know that states with a modicum of resources and determination will be able to acquire nuclear, chemical, and biological weapons, as well as ballistic and cruise missile delivery systems of sufficient range to threaten their regions and, eventually, perhaps, even the United States. We know that some terrorist organizations will be able to

acquire lethal chemical and biological warfare agents. We are not confident that these states or organizations will be deterred by threats of retaliation alone.

We know that, for various reasons, numerous states in the future will fail to provide for the basic needs of their populations and that no country will be immune to the potentially devastating effects of natural disasters.

Among the most important factors that are difficult to forecast with certainty are the economic conditions that will prevail in the future. While we assume a continuation along present vectors, we cannot rule out the possibility of developments that could impede economic growth significantly or disrupt trade relations between the United States and its major trade partners. Such disruptions could have potentially profound effects across the board, and result in major cuts in U.S. spending for defense and foreign operations.

U.S. decisionmakers should have confidence that they will not be surprised by the sudden emergence of a powerful military competitor. While the development of some specific military capabilities can sometimes be obscured (as the Iraqi biological and nuclear programs showed), years of sustained investment are required to field and train capable conventional forces. Developments of this nature should be detected by our intelligence community.

Finally, we should have high confidence in the continuation of a crucially important but overlooked factor in our security: the existence of shared values, objectives, and habits of cooperation among the major democratic powers. This is an asset of incalculable value. It means, among other things, that none of these states needs to concern itself with the possibility of military threats from any of the others. It also means that, other things being equal, these powers can count on each other to pursue broadly cooperative and constructive policies, at least on the major issues of national security.

There will always be some uncertainty about whether and how the United States might respond to specific future conflicts or crises, particularly when the interests at stake are seen to be marginal. Most domestic controversies about U.S. military involvements stem from differences of view either about the degree of U.S. interest at stake in the conflict (as has been the case with Bosnia) or about the best

option for defending that interest (as was the case with the Gulf War). Furthermore, decisionmakers' perceptions about the degree of U.S. interest sometimes change as situations evolve. These dynamic factors make it difficult to predict with confidence when and where U.S. forces might be called upon to engage. However, force planners should be more concerned with anticipating the types of operations that our forces might need to undertake than with predicting when and where they might occur.

THE NATIONAL SECURITY STRATEGY

The strategies advanced by the two administrations to hold power since the end of the Cold War have been remarkably similar, both to each other and to the strategies employed by all U.S. administrations since the end of World War II. Our assessment of national objectives and the international environment suggests that the major themes of these strategies will remain at the center of future U.S. strategy.

Engagement

The current U.S. administration, like its predecessors, recognizes quite clearly that the growth of interdependence means that the United States has no realistic alternative to a strategy of engagement. Because events and trends beyond our borders can impinge in an increasingly direct manner on Americans, our government cannot hope to fulfill its most basic responsibilities to its people unless it works to ensure that it has the capacity to influence events and decisions abroad. One abiding purpose of U.S. engagement abroad will be to ensure balance and stability in regions of greatest importance to the United States. Specifically, we will continue to work to prevent states hostile to U.S. interests from dominating these regions through threats or use of military power.

The importance of a strategy of engagement is magnified by the fact that, to a growing extent, effectively addressing any of the major issues on the international agenda—be they related to trade, regional stability, proliferation, the environment, or other key issues— necessitates cooperative and coordinated policies among many governments.

Alliance Leadership and Management

U.S. strategy also recognizes the importance of sustaining coopera-
tive relationships with allied nations. As Figure 3.5 shows, most of
the world's most powerful economic states are also U.S. allies. The
fact that these states rely on the United States as the ultimate guaran-
tor of their security and the provider of stability in their regions,
helps ensure that the United States has an important voice in deci-
sions that affect our interests. Thus, sustaining, strengthening, and
adapting the framework of cooperative relationships among the
major democracies is a central theme in the national security strat-
egy.

Spreading Democratic Values

U.S. foreign policy has long recognized that America's interests are
advanced by the spread of democracy. Democratic states tend to

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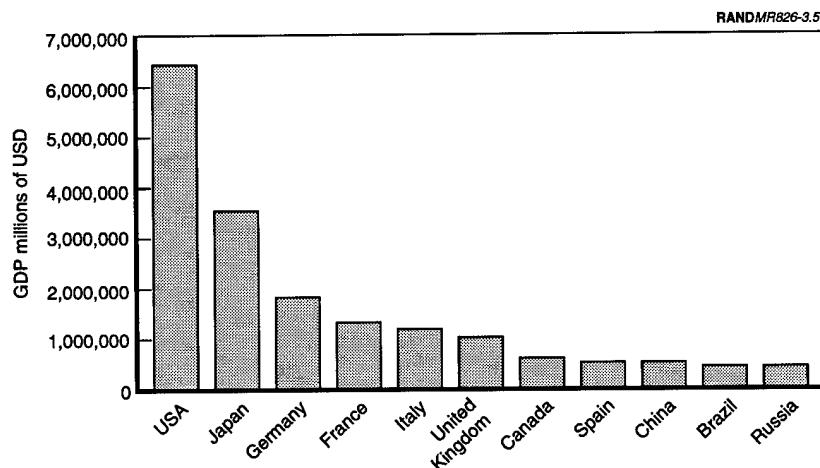
SOURCE: The Statesman's Year-Book, 1995–96

NOTE: Estimates of Gross Domestic Product on an Exchange Rate Basis

Figure 3.5—The World's Largest Economies, 1993

make good neighbors and good partners. The recent widespread rejection of communist ideology and statist economic models presents a unique opportunity to expand the sphere of democratic, market-oriented states. Thus, our strategy will continue to encourage and support governments seeking to introduce democratic institutions and market-based economic systems.

These fundamental tenets of our national security strategy establish the framework within which the defense strategy is formulated.

Defense Strategy

Like other states, the United States maintains military forces to protect the nation from direct threats of attack. Unlike most other nations, the United States also fields and employs military forces to underwrite the security of other states. That is, the United States is an "exporter" of security and stability. Recognizing that the best way to protect and advance U.S. interests is to invest in stability in the most important regions of the globe, the United States has built a network of security relationships with states in Europe, the Far East, Southwest Asia and the Middle East, and the Americas.

One outgrowth of these relationships is that the United States has taken responsibility for the protection of important common interests in these regions. In return, we are entitled to expect that our partners will do their parts to contribute to a stable order in their regions and to the advancement of common interests worldwide. The vitality of this partnership depends critically on the capabilities of U.S. military forces: Our security relationships can remain viable only as long as U.S. forces are capable of defending U.S. and allied interests.

Our most important overseas interests (and, not coincidentally, our major allies) are clustered in three regions:

- Europe and East Asia, because this is where most of the "movers and shakers" of the international community are. If we want to get something done internationally, whether it is controlling the spread of sensitive technologies, expanding international trade, or organizing an economic boycott against a rogue state, we start with our allies in these regions.

- Southwest Asia and the Middle East, primarily, though not exclusively because of the critical and irreplaceable role played by petroleum in our economy.

- Because of their sheer proximity, events in Canada, Mexico, and the states of the Caribbean and Central America can directly affect important U.S. interests. In this regard, the potential for internecine violence in a post-Castro Cuba will continue to command some attention from U.S. military planners.

Sorting Out Challenges and Threats

One could list a number of threats relevant to defense strategy and force planning, essentially taking the broad challenges and threats already listed above and making them more specific. However, in the interest of brevity, a somewhat different approach is applied here. In general, defense strategists and planners focus on threats that have one or more of the following attributes:

- The potential adversary (nation state or otherwise) is pursuing (or may pursue) policies that conflict with U.S. preferences and objectives.

- The potential adversary possesses (or may acquire) the military means to advance his policies.

- The potential adversary's actions could threaten important U.S. interests.

Threats that occupy the intersection of these three sets of conditions ("planning cases") constitute the most salient problems for defense strategy and force planning (see Figure 3.6). Detailed operational plans are prepared for defending against such threats. Threats occupying the intersection between two of these three sets ("hedging cases") generally demand our attention as well, constituting eventualities against which prudent strategists plan.

This is not to say that our forces will never be called upon to address threats that fall outside these zones of intersection. Presidents and geopolitics being what they are, it is very difficult to predict where and under what conditions U.S. forces might be called upon to fight,
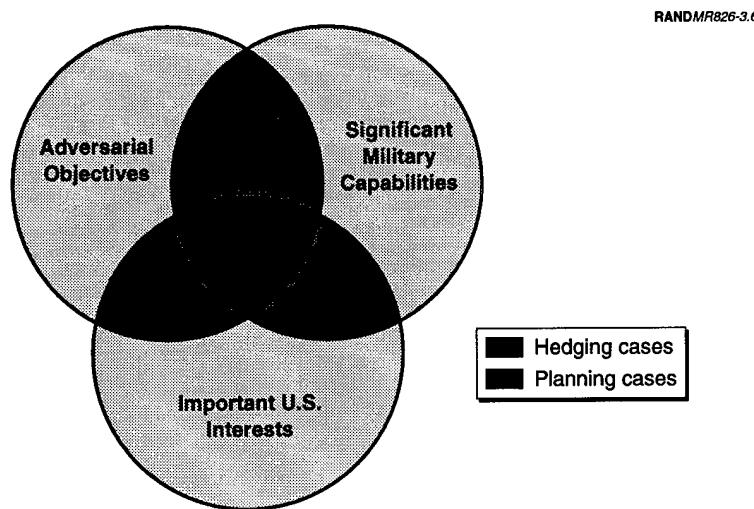
Figure 3.6—A Framework for Classifying Threats

especially when the United States confronts challenges that involve U.S. interests that are less than vital. In general, rather than trying to plan specifically for all such "lesser" contingencies, planners should develop generic scenarios against which to prepare and assess U.S. forces.[2]

This approach has the benefit of focusing the force planners' attention on the potential threats that they ought to worry most about (see Figure 3.7):

- Nations that share our basic objectives and are unlikely to change their spots (e.g., our NATO allies, Japan, the Republic of Korea, Australia) need not be of concern, no matter how powerful their military capabilities.

- Nations that pursue policies antithetical to our own but that lack the capability to threaten important interests need not distract

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[2]For a statement of U.S. policy regarding the use of force and forces, see Perry (1995), pp. 14–17.

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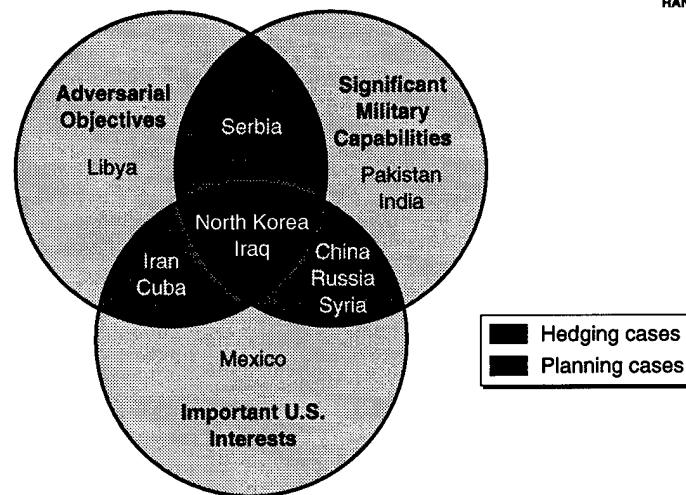
Figure 3.7—Threats and Potential Threats

the force planner.[3] By acquiring WMD, however, such nations can vault themselves to the center of attention (e.g., Libya).

- Nations that have sizable military forces and whose future geopolitical orientation is uncertain (e.g., Russia, China) merit close attention, especially if these nations are located in regions where important U.S. interests lie.

This effort at identifying current and future problems worthy of attention could be further elaborated, but the basic point is made: When we plan force for major conflicts, we need not worry about everything.[4] Actors that lie within the intersection of interests,

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[3]The exception here is the need to be able to evacuate American citizens from dangerous situations. The safety of Americans is always an important U.S. interest, and their safety could be put at risk in virtually any country. Therefore, the DoD must be prepared to evacuate noncombatants "anytime, any place."

[4]It may be that policymakers from time to time will be confronted with problems lying outside the heart of our three-ring framework—Rwanda and Grenada are recent examples—but that is a different issue, having more to do with crisis management than force planning.

objectives, and capabilities are of primary concern. Actors that possess two of the attributes must also be considered in force planners' calculations. Actors that do not have at least two of the three attributes generally need not be of concern in the near term. However, strategy and force planning should address even these cases if there is a reasonable possibility that the actor might acquire two of the attributes in the future.

FORCES FOR WHAT? MISSIONS OF THE U.S. ARMED FORCES

The approach thus far has focused on the questions of where and against whom the United States might need to employ sizable general purpose forces in combat operations. It has not yet addressed the critical issue of how these and other forces are to be employed; that is, what will they be called upon to do and under what conditions? This is, in many ways, the most important set of questions to address, for the answers inform how we organize, train, and equip forces.

This section describes those missions for which U.S. forces should prepare over the next twenty years or more.

Deter and Defeat Attacks on the United States

Protecting our nation's populations and territory from attack has always been a vital interest. For the foreseeable future, the most serious threats of direct attack will arise from WMD in the hands of potential adversaries.

We have already noted that the proliferation of such weapons and their delivery means is a near certainty over the coming two decades. Those means could include covert forms of delivery, such as smuggling weapons into the country. Hostile governments, as well as subnational actors, are likely to seek such capabilities, in part to attempt to deter U.S. involvement or constrain U.S. options in regional disputes and crises. To the extent that such proliferation occurs, it also raises the risk of unauthorized or unintended attacks.

To deal successfully with such threats, U.S. forces should retain the capability to retaliate against attackers in a devastating manner,

being able to inflict enough damage on them to make any attack unacceptably risky and costly. In addition, U.S. forces should be capable of limiting the damage attacks can cause on our territory, especially attacks by ballistic or cruise missiles and aircraft. This mandates a defense capability against all forms of limited attacks, if and as potential adversaries acquire such capabilities (see below).

Other threats may emerge that directly affect the well-being of the American people. At some point in the future, U.S. military forces (as well as civilian agencies) may be called upon to deter, deny, or punish state-sponsored attacks on U.S. civilian and military information systems. It is also possible that foreign threats to the U.S. environment or to common world resources, such as fisheries, might also necessitate U.S. military counter-action.

Deter and Defeat Aggression Against U.S. Allies, Friends, and Global Interests

The level of U.S. interests at stake in cases of overt aggression can vary, up to and including vital interests. Challenges can take the form of large-scale, combined-arms offensives against allies and friends or of aggression and assertions of sovereignty that threaten freedom of transit and other uses of the seas, air, or space. Because the United States has important interests in several regions and because those interests may be contested by any of several potential adversaries, the United States must be prepared to cope with nearly simultaneous attacks by at least two major regional powers.

For a number of reasons, the threat posed by regional aggressors is a demanding one:

- Many of our most important interests lie in regions far from home. Thus, the United States is faced with the problem of having to project power over great distances to confront the forces of its adversaries "in their backyards."

- Warning of impending attacks may be very short (on the order of a few days or less) or ambiguous. Yet, U.S. forces may be compelled to achieve their initial objectives rapidly to minimize the territory captured and damage done by attacking forces.

- For political and economic reasons, the forces that the United States stations and deploys forward in peacetime normally will not be capable of defeating large-scale aggression without substantial reinforcement.

- Deployments of U.S. forces abroad may be impaired by the denial of transit routes (such as the Suez Canal) or by an inability to use ports and bases en route or in the theater.

- Our adversaries may possess WMD and the means to deliver them accurately.

- U.S. military operations may be further constrained by a number of factors, including a desire to avoid provoking the enemy to use WMD, the need to minimize U.S. (as well as enemy civilian) casualties, the need to maintain the cohesion of the U.S.-led coalition, and the need to limit the risks of provoking the involvement of additional outside powers and thereby widening the conflict.

Not surprisingly, given the magnitude of the task and the importance of interests at stake in regional conflicts, the demands of theater warfare will continue to be the dominant factor sizing and shaping the overall U.S. military force posture.

Protect the Lives of U.S. Citizens in Foreign Locations

This is an important and enduring responsibility of the U.S. government. To fulfill it, U.S. forces may be called upon to

- Evacuate endangered U.S. (and allied) government and civilian personnel

- Rescue U.S. citizens held hostage

- Defend *in situ* U.S. personnel under attack.

U.S. forces may be called upon to undertake these operations in several widely dispersed areas simultaneously. For example, a single event can trigger violent demonstrations in several countries at once. Evacuation and rescue operations sometimes may have to be conducted without the permission or support of the local government.

Underwrite and Foster Regional Stability

This mission accounts for much of what U.S. forces do on a routine basis, especially in their overseas operations. The United States will take several complementary approaches to accomplishing this mission:

- Prevent the coercion of friends and promote a durable balance of power. The routine presence of U.S. forces in a region, both by stationing and by temporary deployments, visibly underscores our commitment to the security of our allies in that region, thus contributing to deterrence and stability. U.S. forces stationed or deployed abroad gain familiarity with the operating environment of those regions and conduct combined training with the forces of allied and friendly countries. Regional arms control efforts, as well as judicious sales and transfers of arms, can also help maintain a stable balance in favor of U.S. interests.

- Help to resolve regional or internal conflicts. U.S. military power can be brought to bear to support diplomatic efforts aimed at settling inter- and intrastate conflicts. On occasion, U.S. forces, often operating in conjunction with the forces of other nations, may be called upon to conduct intervention and peace enforcement operations, in situations where one or more parties to a conflict can be expected to resist our intervention. Alternatively, U.S. and other outside forces may be asked to conduct peacekeeping operations by monitoring and facilitating compliance with a cease-fire or an agreed settlement—a less demanding mission than peace enforcement. One task frequently assigned to U.S. forces in these types of operations is to help monitor or enforce arms and other embargoes.

- Defend threatened indigenous populations. From time to time, the United States may undertake to defend and support endangered populations threatened by other indigenous groups, their own national governments, or the government of a neighboring state.

- Assist friendly governments; help bolster democracy. U.S. forces, generally operating in small teams, are likely to be asked to render advice and assistance to the forces of friendly governments that are threatened by insurgency or other lawless-

ness within their own borders. U.S. military assistance and training and military-to-military contacts with foreign counterparts also serve to encourage respect for democratic and humanitarian principles in foreign lands.

In any of these operations, it is important to recognize that what begins as a small effort can develop into a major U.S. involvement as a result of the actions of the adversary or an ally of the adversary. Furthermore, even small-scale operations can constitute a major drain on U.S. resources if they persist over a long time. Thus, U.S. decisionmakers will be highly selective in choosing to commit U.S. forces to such operations. Often, the United States can make invaluable contributions to multilateral military operations by providing not troops or combat forces but assets that few other nations possess in abundance, such as strategic and tactical lift, specialized logistics support, and reconnaissance and communications capabilities. Even support limited to these functions is not risk free: The spread of more-capable surface-to-air missiles and other weapons to Third World nations enables even small, subnational groups to threaten U.S. forces abroad.

Overall, the maintenance and periodic demonstration of U.S. superiority in weapons and power-projection capabilities will facilitate both the protection of friends and the deterrence of adversaries.

Counter Regional Threats Involving WMD

The proliferation of WMD will severely complicate a number of U.S. military missions. Most broadly, U.S. strategy calls for a three-pronged approach to dealing with this threat:

- First, we will work to prevent the spread of WMD and their principal means of delivery.

- Second, we will seek to deter the use of these weapons (and to reduce incentives to acquire them in the first place) by retaining the capability to retaliate in devastating fashion against those who use them.

- Third, we will develop capabilities to prevent the use of such weapons, through a combination of counterforce attacks, multi-layered defenses, and passive protection measures.

The last mission—preventing (as opposed to simply trying to deter) the use of WMD—will be as difficult to carry out as it is important. Competent adversaries will camouflage, harden, and disperse their WMD and the facilities that they use to create and support them. Politically, the United States may find it difficult to gain widespread international support for imposing effective sanctions on proliferators or for preemptive attacks on their stocks of WMD. Finally, it may prove morally and politically difficult to mount a devastating retaliatory attack against an adversary that has used WMD in a limited fashion.

Deter and Counter State-Sponsored and Other Terrorism

Many states or subnational groups that are hostile to U.S. interests but are loathe to risk a direct military confrontation with the United States may use terrorism to attack U.S. citizens and property. As with our efforts to counter WMD, our approach to countering terrorism will be multifaceted. Specifically, U.S. military forces may be called upon to undertake the following types of operations:

• Protect U.S. overseas personnel and facilities against terrorist attacks

• Conduct preemptive attacks against terrorist bases and other facilities

• Conduct punitive attacks against governments sponsoring terrorist operations

• Conduct blockades and help enforce embargoes against states sponsoring terrorism.

Such operations may be constrained by the fact that states sponsoring terrorism will attempt to mask their involvement, and thus make it difficult for the United States government to assign responsibility conclusively for particular acts and to convince other governments of its findings. In such situations, it will be especially difficult to garner international support for preemptive or punitive attacks on states that support terrorism.

Provide Humanitarian and Disaster Relief at Home and Abroad

Humanitarian and disaster relief efforts will constitute the most frequent form of nonroutine U.S. military operations, both at home and abroad. Civilian and nongovernmental agencies will frequently be swamped by the magnitude of major disasters. Moreover, U.S. military forces will sometimes possess unique capabilities that are urgently needed to ameliorate human suffering.

Key tasks associated with this mission include

- Transport food, clothing, shelter, and other emergency supplies

- Provide potable water and emergency communication and medical services

- Help repair damaged infrastructure

- Provide physical security for relief personnel and endangered populations and facilities.

Counter the Production and Trafficking of Illegal Drugs

For the past several years, U.S. forces have been assisting law enforcement authorities both at home and abroad in reducing the flow of illegal drugs into the United States. Research suggests that supply interdiction (as opposed to demand reduction) is unlikely to affect the market for illegal drugs significantly in the United States (Reuter, 1988). However, continued U.S. military involvement in the suppression of drug production and smuggling is likely, given that illegal drug use in the United States is a continuing source of concern to the U.S. public and Congress. The illegal drug trade also poses a threat to the stability of societies and governments in friendly countries.

The following tasks will likely continue to be assigned to U.S. forces:

- Collect and disseminate intelligence on the production and trafficking of illegal drugs

- Assist the forces of friendly countries in suppressing the production and trafficking of narcotics

- Assist other U.S. government agencies in interdicting the importation of illegal drugs into the United States.[5]

An Attention Span Problem?

The reader will note that the list of missions offered here is comprehensive. In fact, it is difficult to imagine a U.S. military task that would not fit under one or more of these missions. Some strategists and planners might aspire to provide the military services with a somewhat narrower focus than this. Unfortunately, this is not possible because of the unique role that the United States plays and will continue to play in the world. Like it or not, we are the security safety net for much of the world: If we do not do it—whether the "it" is patrolling the Persian Gulf, deterring aggression in Korea, reassuring allies in Europe, or thwarting leaders who seek WMD—who will?

And if no one does it, the world will almost certainly become a more dangerous place: If the United States were to eliminate its capabilities to conduct any of the major combat missions listed above, we would not only run the risk of not being prepared for a plausible eventuality, we would very likely raise the probability of that threat arising, as adversaries reacted to our divestiture of the capability. Ultimately, it is this reality that accounts for the fact that this country spends roughly an order of magnitude more on defense than any other nation on earth. No other nation asks its forces to do what ours do. And for better or worse, absent a collapse of our economy or our national will or both, this is not going to change for many years to come.

Priorities

Nevertheless, not all possible future challenges are equally likely or important. What are the top priorities?

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[5]It is also possible that U.S. forces might be called upon to provide assistance in interdicting the illegal entry of other contraband or people into the United States. Other agencies, principally the Customs Service and the Immigration and Naturalization Service, have the lead responsibility for these tasks, however, and U.S. forces should not be organized, trained, and equipped explicitly for these missions.

From the standpoint of overall force structure and resource demands, preparing for large-scale theater warfare ("major regional conflicts" in the current parlance) remains at the center of force planning. No other single mission calls for as much aggregate combat power as fighting a major theater war. Moreover, deterring and defeating large-scale aggression is most likely to be associated with the defense of interests that are among our nation's most important. For these reasons, planning and evaluating the bulk of our forces against the demands of future theater wars is entirely appropriate.[6]

This is not to say that other missions should be considered simply "lesser included cases" of theater warfare. While many of the force elements used for countering terrorism, underwriting regional stability, or providing humanitarian relief will be the same as those needed to defeat a major regional aggressor, these other missions often require specialized capabilities that will affect the way units are trained, organized, and equipped.

Additionally, it is essential that adequate resources be devoted to addressing potential future "show stoppers"—emerging enemy capabilities that might negate current U.S. operational concepts or threaten vital U.S. interests in new ways. A prime example is the growing threat of WMD. Without extensive improvements in the capabilities of U.S. forces to prevent their use, a small number of delivery vehicles equipped with nuclear, chemical, or biological warheads could dramatically raise the costs and risk of U.S. and allied defensive operations. Needless to say, such weapons can also allow an adversary to threaten our homeland directly.

In short, even though planners must take into consideration the demands of all of the potential missions to evaluate fully the adequacy of a given force structure and posture, not all of those missions should be given equal weight.

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[6]Scenarios are extremely useful to the force planner as yardsticks against which to measure the capabilities of one's forces. Indeed, it is impossible to conduct serious force planning without reference to scenarios that represent the types of challenges that forces may face. Given the long list of missions for which U.S. forces must prepare, and the different conditions under which they may have to fight, no single scenario (or pair of scenarios) will ever be an adequate yardstick for assessing the capabilities of our forces.

Under What Conditions?

Getting a fix on the conditions under which U.S. forces will operate is nearly as important as understanding the major types of operations for which they must prepare. In many cases, the conditions under which combat occurs and the constraints under which our forces operate can make the difference between success or failure. For example, if there were no constraints on the degree to which U.S. forces could apply firepower, nuclear weapons would play a much larger role in our planning for combat operations. Moral and political constraints weigh heavily against this approach, however, and play a key role in shaping our military forces and posture.

The following factors should have considerable weight when evaluating U.S. military capabilities:

- **Expeditionary operations.** Because we have far-flung interests and most of our enemies reside across the seas, U.S. forces must be prepared to fight far from home. Rescue and humanitarian operations may be required in virtually any geographic region.

- **Short warning.** Competent adversaries will recognize that their best chance for success is to attack and secure their objectives before the bulk of U.S. forces is deployed to various theaters. Generally, therefore, U.S. forces should be prepared to move quickly to the fight.

- **Multiple, nearly simultaneous threats.** Adversaries may also attempt to exploit U.S. involvement in a conflict by initiating aggression while U.S. forces are deployed and operating elsewhere. To disabuse would-be aggressors of such notions and to defend U.S. interests if deterrence fails, the United States will have to demonstrate both the capability and the will to cope with nearly simultaneous attacks by major regional powers as long as multiple potential adversaries continue to exist.

- **"Come as you are" wars.** Not only can large-scale aggression occur quickly; the success or failure of the aggression is also likely to be determined quickly. One practical upshot of this is that we should not count on being able to train unready forces or produce new stocks of weapons during the conflict—we will have

to fight with what we have on hand and be ready to replenish stocks after the war.

- **Asymmetries of stakes and commitment.** Americans have had the luxury of having to fight for truly vital interests—that is, those in which the future shape or governance of the nation is at stake—only very rarely. On the other hand, our adversaries frequently fight for such high stakes, be they a foreign government (e.g., North Korea in 1950–1953; North Vietnam, 1960–1975; Iraq, 1991) or a faction leader (Aideed in Somalia). This asymmetry in stakes means that we will very often find that our adversaries are prepared to withstand a great deal of punishment in wartime—a fact that will test our resolve and staying power.

- **Casualty intolerance.** Directly related to these asymmetries of stakes and commitment is the U.S. sensitivity to casualties. While Americans may be prepared to accept heavy casualties in a future conflict over stakes they regard as vital, they will have little tolerance for continued casualties in involvements that they regard as more marginal to U.S. interests. Historically, U.S. enemies have sought to prolong combat and increase U.S. casualties in the expectation that the American public would turn against the involvement and compel the U.S. government to make otherwise unwarranted concessions. U.S. planners must anticipate similar attempts and adopt warfighting strategies and acquire military capabilities that will permit the United States to terminate combat involvements rapidly and with minimal U.S. casualties. Without such capabilities, U.S. strategy will not be viable vis à vis many future adversaries.

- **Sensitivity to collateral damage.** Americans are also hesitant to support military operations that cause high levels of civilian casualties. Therefore, U.S. forces must be able to employ firepower effectively without causing significant collateral damage.

Common Attributes

These military missions share important common attributes that should be taken into account when planning and evaluating force structures:

- All of the missions are "joint": The commanders to whom such missions are assigned will, in almost all cases, draw forces from multiple services in order to accomplish them.

- Even missions aimed at achieving limited objectives, such as protecting indigenous populations, may have the potential to escalate into large-scale or prolonged combat operations. The potential for such escalation may grow over time as potential adversaries acquire more lethal weapons. In extreme cases, for example, the United States may require the capability to invade and occupy a rogue state whose government has employed WMD against the United States, its forces, or its allies.

- U.S. forces must be trained and postured to conduct effective combined operations with the forces of allied and friendly countries. For example, U.S. forces may be called upon to provide close-air and other forms of fire support to indigenous or third-country forces engaged in combat.

- Television and other media are likely to influence decisions regarding both whether and how U.S. forces will conduct operations.

- Assessments of U.S. military capabilities should take into account the potential psychological effects of certain U.S. military operations on enemy forces.[7]

Planners must consider these attributes of future missions, as well as the conditions and constraints under which U.S. forces may have to operate if they are to provide future U.S. presidents with the robust military capabilities needed to cope with a wide range of potential developments. Such qualitative considerations are often overlooked in conventional assessments of military capabilities.

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[7]There is a powerful tendency in the U.S. military establishment to analyze things that one can count, such as numbers of enemy troops and vehicles killed, to the exclusion of other factors that are (at least) equally important determinants of combat capability, including training levels, morale, and unit cohesion. Such a tendency can both warp battle damage assessments and limit the effectiveness of U.S. combat operations. For an assessment of the effects of U.S. air operations on enemy morale and willingness to fight, see Hosmer, (1996). See also Hosmer (1994; classified publication, not for public release).

Even in contingencies where important U.S. interests are at stake, the conditions and constraints shaping the U.S. military response may require highly effective U.S. capabilities. For example, the requirement to defeat aggression by regional powers rapidly might prove particularly demanding if our adversaries possess WMD and the means to deliver them against U.S. forces in the theater and the United States itself. In contingencies where U.S. interests are more marginal, there is also likely to be a requirement for highly effective U.S. capabilities, as U.S. forces will be called upon to prevail with a minimal cost in terms of U.S. casualties and prisoners, and with minimal damage to the civilian population.

Taken altogether, these conditions and constraints add up to a highly demanding strategy.

SUMMARY

A clear bottom line for force planners should emerge from this review: The United States plays unique and critically important roles in the world. If future administrations are to continue to ensure that they can secure and advance the basic objectives of our nation—the protection of our people, our values, and our prosperity—they must ensure that the United States retains the will and capacity to underwrite the security and stability of distant areas important to U.S. interests. To support such a strategy, the United States will continue to require superior military forces.

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ADAPTIVENESS IN DEFENSE PLANNING: THE BASIS OF A NEW FRAMEWORK

Paul K. Davis, David Gompert, and Richard L. Kugler

INTRODUCTION

After the November 1996 election, the United States began a major review of national defense strategy. Much of the current debate revolves around the questions: How many and which major regional conflicts (MRCs) should the United States be prepared to fight, and how many forces are needed to get the job done? These are the wrong questions—or, rather, only part of the question. The right one is larger: How can the Department of Defense (DoD) best build a defense posture for pursuing U.S. strategic objectives in this era of flux and opportunity?^

The answer, we believe, involves planning and building a U.S. force posture to meet three tests. The "posture," which involves not just the forces but also patterns of deployment, readiness, and operations, should be able to (1) *prevail* in highly diverse war-fighting contingencies, large and small, sudden and not so sudden (slowly developing); (2) *shape* the future international security environment; and (3) *adapt* to changes in strategic conditions. This chapter describes a framework for defense planning that emphasizes and unifies these tests.[1] It provides a new prism through which to view

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[1]This is a somewhat shortened and slightly modified version of a RAND issue paper, *Adaptiveness in National Defense: the Basis of a New Framework*, published in August

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and assess alternative defense postures. We intend our proposals to be practical to senior leadership; yet, they are radical in urging basic changes in the way the DoD does business.

The central precepts of our approach are as follows:

- DoD's toughest challenge is to confront geopolitical, technological, and budgetary uncertainty that is unprecedented in the post–World War II era. The challenge requires setting enduring strategic goals, which include but go beyond war-fighting goals, and assuring that the evolving defense posture always points toward those goals.

- A key element here is that the very nature of warfare is changing, in ways not yet fully understood. This means that DoD has the difficult task of deciding how and at what pace to *transform and recapitalize* U.S. forces to provide contingency capabilities for a new era of warfare and adversaries who learned from Desert Storm.

- Although preparing for possible contingencies is DoD's core concern, the United States—because of its international and technological strength—can also *shape* the future environment to some degree, not just react to it. To do so means integrating DoD force planning with U.S. foreign policy more broadly than comes naturally within the threat-based planning framework. As part of this, we see the need to strengthen our overseas presence and coalitions because the perimeter of U.S. interests is growing, not shrinking.

- Finally, the defense posture must be not only superior but strategically adaptive because the international and military environment will continue to change, as may national priorities.

Taken together, these precepts of *planning for adaptiveness* suggest a *portfolio management* approach to defense planning, a practical and realistic approach that would facilitate regularly reviewing and adjusting emphasis within the program to support the multiple goals

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1996. It was generated in a cross-cutting project for the Office of the Secretary of Defense, Joint Staff, and Defense Agencies.

related to contingency capability, environment shaping, and strategic adaptiveness.

In this chapter, we review traditional "threat-based planning" and its shortcomings. We then describe our alternative framework and identify broad force-posture options that should be assessed within it. Finally, we summarize preliminary analytical results.

THREAT-BASED PLANNING AND ITS SHORTCOMINGS

Background

Since the early 1960s, the DoD has assessed the defense program in terms of how many wars could be fought concurrently with the envisioned forces. It has had defense programs geared to 2-1/2 wars (1960s), 1-1/2 wars (1970s), multifront global war with the Soviet Union (1980s), and, lately, two MRCs.

Under each of these, the DoD has used "point threat scenarios" as test cases for Service programs and overall force structure. Figure 4.1 illustrates what such a scenario might look like today, using notional numbers.[2] It assumes that Iraq invades Kuwait, after which North Korea invades South Korea (the reverse might be assumed instead). Not only are the adversaries specified, but so also are many scenario details—even the chronology. This scenario may be one good test case, but it is clearly inadequate unless it is a bounding case or truly representative of all likely contingencies. Today's MRC scenarios are neither. They suppress uncertainty rather than force us to face up to it, and they do not satisfactorily measure the adequacy of our force posture.

To be sure, secretaries of defense have always recognized that U.S. forces will be used in unanticipated ways. They have seen the scenarios as mere *illustrative* test cases and as valuable elements of declaratory policy and deterrence. During the Cold War, they could

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[2]The DoD has sometimes provided additional scenarios reflecting, e.g., lesser regional conflicts. It has always exhorted the Services to consider a range of cases in developing programs. In practice, however, attention has centered on a "big scenario" analogous to Figure 4.1. This is of concern to the DoD, which is considering changes.

RAND*MR826-4.1*
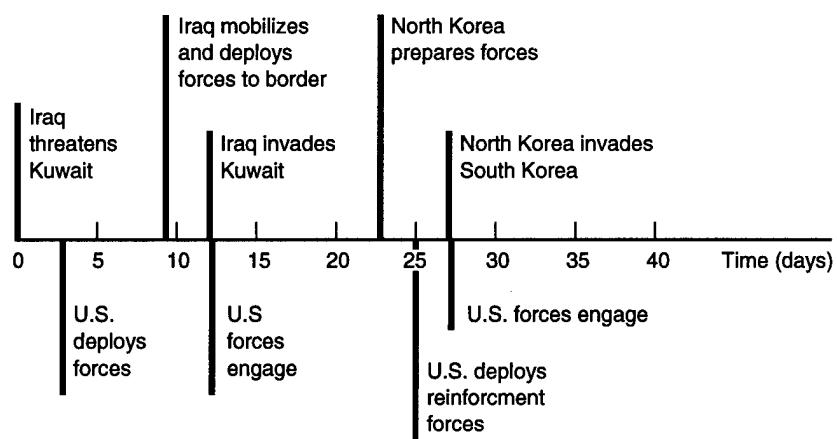
Figure 4.1—Schematic of a Threat-Based Planning Scenario

be confident that building forces for any reasonable point scenario involving the massive and multifaceted Soviet threat would generate forces with considerable inherent flexibility—with nuclear weapons to provide insurance.

In 1993, Secretary of Defense Les Aspin considered alternatives to these scenarios, including suggestions from GEN Colin Powell to focus more on generic war-fighting needs. But Aspin chose to stick with the threat-based approach because he judged it necessary in convincing Congress to support an adequate defense program—and because Iraq and North Korea were convenient and credible villains, whom we have no hesitation to label as such. Aspin expected inside-the-Pentagon planning to go well beyond the point scenarios. His *Bottom-Up Review* made clear the limited purposes intended for the test cases.

In practice, however, DoD remains "hooked" on the simple formula of optimizing for the official scenarios (e.g., in building forces that get to the region just in time to prevail in those scenarios). The threat-based approach is seductive. It provides a single, simple yardstick against which to measure the adequacy of U.S. forces. It is therefore

easy to explain and thus to gain public support for defense, especially when the threats are real and vivid. It also allows the DoD to coordinate planning across Services, demanding that all of them build forces to satisfy needs of the planning cases.[3] In sum, the threat-based approach makes it easier to get everyone, from the Services to the Congress, to march to the same drummer—even if the drumbeat is rather arbitrary or too limiting.

Problems of Framework

Whatever its attractions, the point-scenario threat-based approach is wrong for our era. This is not a mere defect in the esoterica of defense planning. The problems are real and serious:

- *Inappropriate Peacetime Posture.* Selected U.S. force elements (units) are being run ragged in operations having essentially nothing to do with the planning scenarios that have determined the "posture" (i.e., not only the active and reserve force structures, but also deployments, readiness levels, and priorities). As a result, we have witnessed serious operational stresses, confusion in the ranks about mission, hasty improvisation, and occasional sub-par performance—despite having the best military technology and personnel $260 billion per year can buy.

- *Achilles' Heels.* Even if war actually occurred in the Persian Gulf, Korea, or both, our adversaries would likely try to exploit Achilles' heels that do not even show up in the standard planning scenarios. Potential adversaries already know better than to confront our forces as in Desert Storm. We are more vulnerable to military failure than is generally realized.

- *Failure to Assess Adaptivity.* Too often, DoD studies of force and weapon options focus on optimizing for the point planning scenarios and a baseline of numerous detailed assumptions. This is quite pernicious, since the results are then strongly biased by the semiarbitrary assumptions, which are often the result of compromise in committee.

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[3]This said, the Navy and Marines have always sized forces for presence and crisis-response, not just MRCs.

- *Political Fragility.* The defense budget would be quite vulnerable politically if the Iraqi or, more likely, the North Korean threat were suddenly to vanish. In such a case, would we immediately cash in half our force posture as many would surely suggest? Certainly not, and for good reasons. But then why not make those good reasons the basis for our defense program in the first place?

- *Questionable Suitability for the Future Strategic Environment.* Will the forces we are developing, measured against today's two threat scenarios, be able to deal effectively with new adversaries, allies, regional alignments, technologies, and missions? Quite possibly not, and changing the posture quickly will be impossible without years of preparation.

The danger is just as great that we will fail to exploit U.S. advantages. Designing forces on the basis of fixed current threats and current ways of fighting is exactly the wrong bias as we stand on the doorstep of a revolution in military technology.

Planning Under Uncertainty

How One Plans Under Great Uncertainty. Whether in business, sports, or war, the school solution for dealing with uncertainty is to embrace *planning for adaptiveness.* This is intuitive to modern U.S. chief executive officers, football coaches, and field lieutenants; it is DoD that is peculiar in having focused on point cases. This said, we still have to know what our military forces might need to do. A call for unbounded adaptiveness would amount to calling for a blank check. This drives us back to where all good planning should begin, with objectives.

National Objectives for Planning Future Forces. Drawing on recent statements by Secretary William Perry and General John Shalikashvili, we can encapsulate key ideas in the useful mantra "promote, prevent, defeat," which suggests three national security objectives: creating conditions to avoid conflict, deterring and otherwise preventing aggression when it is threatened, and defeating it when it occurs. For thinking more specifically about defense programs and postures, we suggest three related and supportive *invest-*

ment goals to ensure that, despite current uncertainties, future postures will permit us to promote, prevent, and defeat:

- A force posture robustly sufficient at all times for a wide range of contingencies ("operational adaptiveness")

- A force posture that can influence favorably how the world evolves—to help "shape the environment," as an element of U.S. foreign policy

- The capacity to change our military posture over time as trends and events dictate ("strategic adaptiveness").

It follows that we should be testing alternative force-posture plans against these separate investment objectives, as depicted in Figure 4.2 and discussed below.

Operational Adaptiveness: Capabilities for Diverse Contingencies. In evaluating the sufficiency of forces for military contingencies, the key is to move beyond one or two point scenarios toward a much broader exploration. Focusing here on the war-fighting aspect, this involves two distinct steps (Figure 4.3). The first is to consider a much longer list of plausible political-military scenarios such as the following:

- Iraq versus Kuwait and Saudi Arabia

- Iran closes the Strait of Hormuz

- Iran and Iraq versus Kuwait and Saudi Arabia

- Russia versus Ukraine

- Russia versus Poland

- Russia versus the Baltic states

- North Korea versus South Korea

- North Korea and China versus South Korea

- China versus unified Korea

- China versus Taiwan

- China versus Vietnam

RANDMR826-4.2

Force-Posture Tests

Capabilities for military contingencies	Environment-shaping activities	Strategic adaptiveness
• MRCs	• Regional stability	• Technology
• LRCsª	• General deterrence	• Doctrine
• Crises	• Would-be competitors discouraged	• Force size
• Other emergencies		• Operational patterns
		• Policies and coalitions
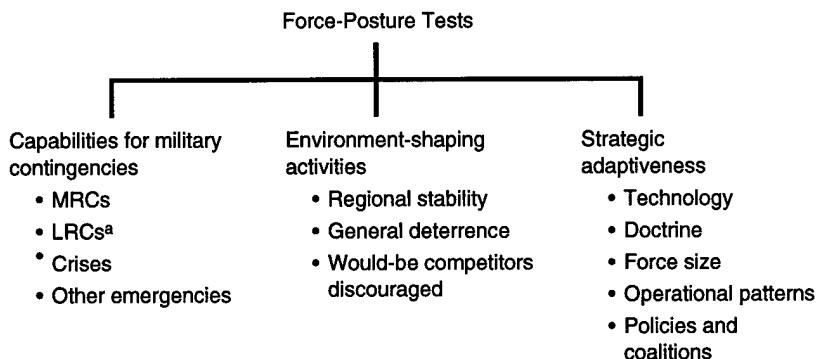
ªLesser regional contingencies.

Figure 4.2—Testing Force Postures

- A "next Bosnia" in the Balkans

- China seeks to control East Asian ocean regions

- Civil war in Cuba

- Civil wars in Algeria, Mexico, etc.

The full list includes some that are politically sensitive—both because they include such nations as Russia or China, which are not and we hope will not become adversaries, and because they consider U.S. intervention in hypothetical conflicts where our interests are controversial or our capabilities would be limited.[4]

The second step is to recognize that *each* political-military scenario (e.g., Iraq invades Kuwait and Saudi Arabia) has innumerable variations, differing in warning time, allies, military strategy, force levels, force effectiveness, weather, terrain, and even the algorithms assumed in war games used to assess capabilities. Thus, for each

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[4]From time to time over the years, the DoD has tried to include sensitive scenarios or to include purely generic scenarios raising similar challenges. Unfortunately, these laudable efforts have sometimes been criticized with accusations that DoD was trying to create threats.

①

②

"Point scenario"
(e.g., as in Figure 4.1)

Long list of
not-implausible
"name-level" or type
contingencies

For each, a "scenario space" of
fully defined contingencies and
model assumptions

Dimensions:
  • Political-military scenario
  • Military strategies
  • Forces
  • Force and weapon
    effectiveness
  • Environmental factors
  • Algorithms and parameters
    depicting warfare

N-dimensional
scenario space   A scenario

Figure 4.3—Moving from Point Assumptions to Scenario-Space Testing

political-military contingency, there is an entire *scenario space* of operational circumstances. Exploring this scenario space would be of interest only to "modeling wonks" except that uncertainties about operational circumstances (e.g., warning time or the fighting effectiveness of defending allies) are very large and have profound effects on the military capabilities needed to prevail. Indeed, it is, if anything, more fruitful to examine a large scenario space for one or two threats than to examine a long list of threats with fixed assumptions about the operational circumstances of each.

Fortunately, with modern processing power, thoughtful design, and appropriate models, we can now conduct such scenario-space exploration quickly. Figure 4.4 illustrates some findings from such analysis. It shows one slice through the database of simulated outcomes, one that shows effects of varying the time of deployment relative to D-Day (x axis), the nominal effectiveness of tactical-aircraft sorties (y axis), and the suppression of tactical aircraft sorties (e.g., by chemical attack or dense air defenses) (z axis, into the paper), while holding many other variables constant. Figure 4.4, then, shows only 240 of some 100,000 outcomes of a simulated war with Iraq over Kuwait and
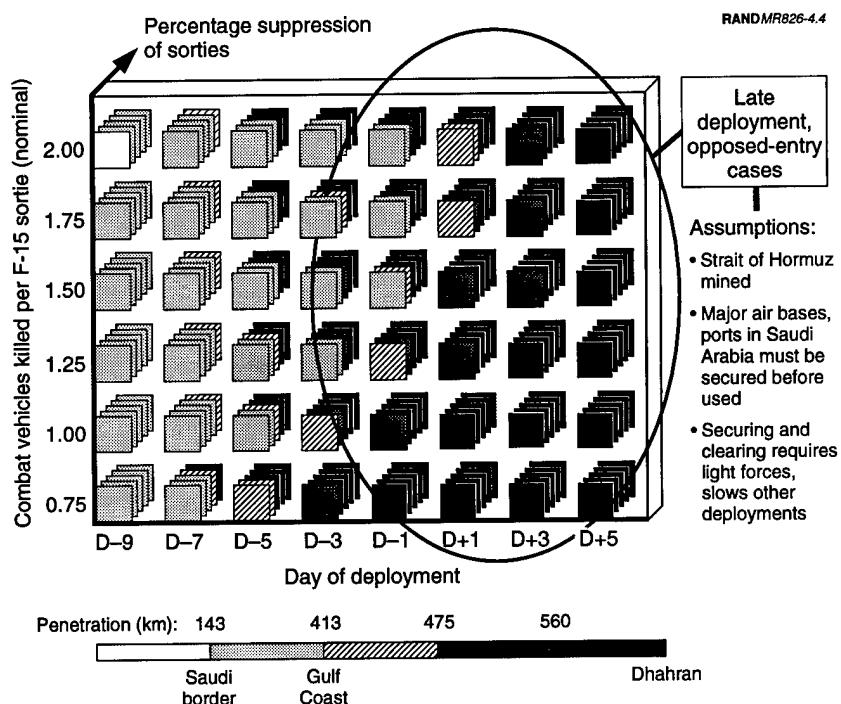
**Figure 4.4—An Illustrative Contingency Analysis for the Persian Gulf
(shading of cells measures quality of outcome: dark is bad)**

Saudi Arabia, where white is a good outcome and black a bad one. It is assumed in these cases that Saudi ports and airfields are initially threatened (e.g., by ballistic missiles or irregular infantry with shoulder-fired missiles) and that the Strait of Hormuz has been mined. In these cases, unless the United States commences the deployment of forces roughly a week or so before the war begins, it has to defer deployment of main forces and instead concentrate early activities on seizing and securing ports and clearing mines. This would give the advancing Iraqi forces nearly a week of additional time before the United States could fully engage them; the results turn out "black" (i.e., bad). Chapter Six suggests a number of force-improvement measures to mitigate these problems, but our point here is methodological.

Contrast Figure 4.4, which confronts forthrightly the huge uncertainties, with traditional analyses built around fixed assumptions. Again, Figure 4.4 is only one slice of the analysis of a single contingency. We consider the combined effects of many combinations of many parameters' values. And we combine those, in turn, with multiple simulations of many other scenarios. We can view different slices of the outcome database interactively by "turning knobs" on the computer display. Some of these knobs relate to measures of effectiveness.[5] We believe this powerful new type of exploratory analysis—qualitatively different from traditional sensitivity analysis—is the appropriate way to test forces and postures for operational adaptiveness in war-fighting contingencies.[6] Note that the objective becomes increasing the fraction of the scenario space in which U.S. forces would be able to prevail (with priority on the most important parts of the space), not increasing effectiveness for a few point scenarios.

Environment Shaping. Environment shaping entails using U.S. military forces to help create international security conditions such that it will be unnecessary to fight to protect our interests. Here, we are making more explicit and methodical the familiar notion—reflected in Secretary Perry's recent statements—that U.S. force posture is, or at least ought to be, related to U.S. foreign-policy goals (see Perry, 1996).

One important goal is promoting stability (e.g., by strengthening and enlarging alliances and by building new cooperative relationships). Another goal is to prevent instability by reducing incentives for interstate competition and by deterring potential rogue countries from contemplating aggression. A related goal is discouraging regional states from attempting to compete militarily with the United States (e.g., by convincing them that the United States could trump any such effort).

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[5]The measure of effectiveness used can have a strong impact on conclusions. For example, ability to conduct counteroffensives would highlight the value of Army units, while stopping an attack might be most easily accomplished with more air forces or allied ground-combat capability.

[6]For a more detailed application and discussion of this approach, see Chapter Six.

Analyzing systematically a given defense program's contributions to environment shaping begins by being reasonably precise in identifying environment-shaping objectives and the capabilities and activities that might contribute to them. To test alternative programs, we use a version of multiattribute utility analysis, akin to methods used in business planning.

Our analysis so far has centered on future U.S. overseas military presence and the contributions of our closest allies. The result has been to demonstrate the potential leverage of low-cost increases in overseas military infrastructure, prepositioning, and especially foreign-military interactions (FMI) and security assistance, such as training, exercises, and education. Such activities are regularly underfunded in all three of our key theaters (East Central Europe, the Greater Middle East, and East Asia). Yet funding these measures requires diversion of budget dollars, and the tradeoffs are sometimes painful or politically unpopular.

Admittedly, these methods involve subjective judgments. But any effort to bring analytical rigor to consideration of the international environment must necessarily do so, and in-depth research and analysis can increase the quality of such judgments. Such partially subjective methods are far better than excluding crucial "soft" issues from force planning or than treating them but relying on impressions and loose conjectures about cause and effect. At a minimum, our approach allows decisionmakers and their staffs to question and change assumptions readily, observing—during the course of a meeting—how this affects conclusions about cost and effectiveness. As illustrated notionally in Figure 4.5, which reflects qualitatively the results of a recent study, decisionmakers may reach some of the same conclusions about priorities even when they approach the subjective-judgment problem from different perspectives. People with different perspectives make judgments about the value of various increments of capability or activity for improving the environment-shaping objective. The model then combines many such inputs and computes the relative cost-effectiveness. Figure 4.5 reflects notionally the conclusion mentioned above, that FMI and security assistance have the highest leverage, even if one can argue about how much value they have. Actual results vary with theater, the baseline assumed (e.g., how many forces are already forward

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Legend:
- FMI/Security Assistance
- Infrastructure
- Prepositioning
- Forward-deployed forces

Y-axis: Value for environment-shaping of additional spending (per marginal $100 million)

From perspective of "war-fighter," skeptical of political measures

From perspective of an internationalist focused primarily on political measures
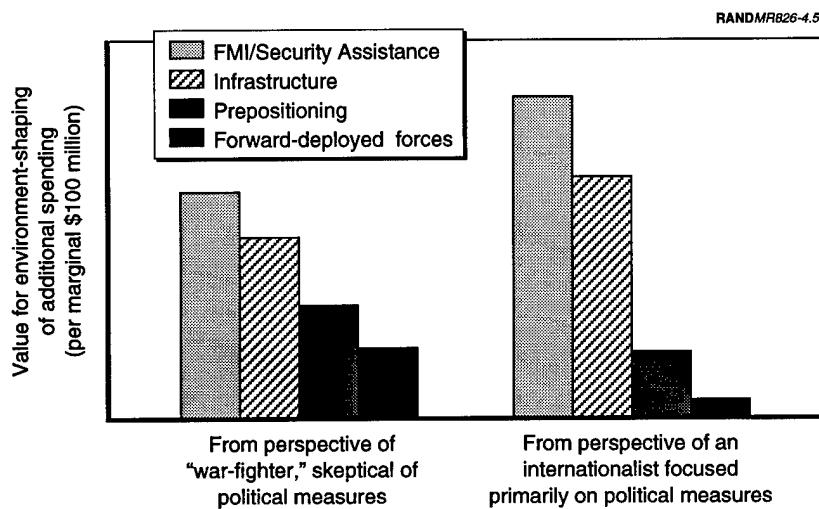
Figure 4.5—Notional Cost Effectiveness Conclusions About Contributions to Environment Shaping

deployed), and the individuals consulted. Consensus is not always possible, of course, even on rank ordering.

U.S. military superiority is one of the reasons we have an unrivaled opportunity to influence the direction and pace of international change. Examining carefully how alternative force postures might contribute to this goal should therefore be an integral part of the new defense planning framework. This will change the perceived importance of various research and development (R&D) and acquisition options. As we shall elaborate elsewhere, it will also highlight the need to strengthen and expand—not disengage from—overseas presence and coalitions worldwide, especially in Europe, East Asia, and the greater Middle East.

Strategic Adaptiveness. Even with skillful U.S. efforts to shape the environment, there is sufficient flux and uncertainty in international politics and in technology that we cannot count on today's favorable strategic conditions to endure. DoD has seldom treated strategic adaptiveness as an explicit issue in assessing the defense program. It now seems critical to do so, because we are entering an era in which

perceived military needs and military operations could shift drasti-cally—perhaps repeatedly and in different directions—over the course of the next 20 to 25 years.

To evaluate strategic adaptiveness, we use the same basic methodol-ogy as for environment shaping. We can identify many of the devel-opments that might require adaptations, for example

- Branches
    - —Korean unification
    - —Chinese military buildup and threatening behavior
    - —NATO expansion
    - —Defense budget
    - —Proliferation of missiles, weapons of mass destruction (WMD), inexpensive air defenses, advanced mines, etc.

- Shocks
    - —Japan "goes independent"
    - —New Arab-Israeli war
    - —Hong Kong situation explodes, spreads
    - —Russia moves against Baltic states, Ukraine, or Poland
    - —"Surprise" cuts in defense budges, disrupting program
    - —Revolution in Saudi Arabia
    - —Actual use of WMD against the United States, its forces, or allies.

This list distinguishes between some predictable discontinuities or branches, and some shocks. Following a simple logic of planning in the face of strategic uncertainty (Figure 4.6), we can also identify possible force-posture adaptations. Some can be well defined in advance as contingent substrategies for branch points; others—in response to shocks—will be more ad hoc and more dependent on flexible hedging capabilities. Some of the hedging programs are in process (e.g., R&D on ballistic missile defense); others are arguably
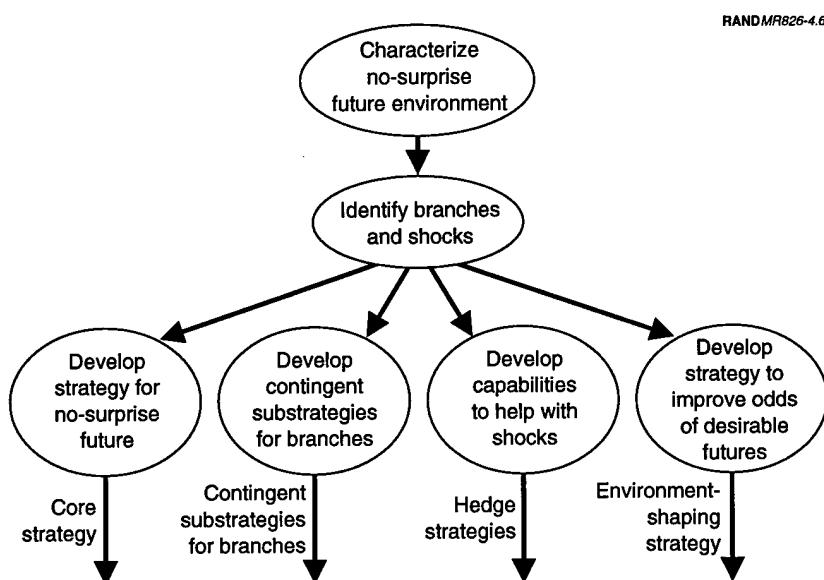
Figure 4.6—A Logic for Strategic Planning Under Uncertainty

underfunded (e.g., technology and systems for swift mine clearance from sea-lanes).[7]

One benefit of introducing a strategic-adaptiveness test would be to help protect innovative experiments by the military departments that might otherwise be endangered by current exigencies in a budget crunch. These include arsenal ships, the Marines' Sea Dragon concepts, light and lethal Army units, and joint mastery of long-range precision strike. In this regard, it is troubling to note recent congressional actions cutting funding for advanced concept technology developments, the very kind of activities that an emphasis on strategic adaptiveness would promote.

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[7]The American industrial base is, of course, an enormously valuable hedge. In only a very few instances, however, does the DoD need to take special protective measures.

Integration Using Portfolio Methods

Our methods create a more complete set of tests for assessing alternative force postures: war-fighting capabilities, environment shaping, and strategic adaptiveness. But the challenge of integrating, or *balancing*, these three considerations remains. Integration is what our top civilian and military leaders attempt earnestly to do. But it is not easy, and the leadership needs a new concept and method for unifying the strands.

We believe that an *investment portfolio* is the right metaphor. Like individuals and firms, national defense must balance multiple goals, stretching from the present day to the distant future, with numerous risk-benefit considerations in mind (Table 4.1). Also, national defense, like the financial world, has a variety of instruments for achieving these objectives (Table 4.2). The challenge is to assemble a portfolio of defense assets that best achieve our national goals, both today and tomorrow. Just as a financial investor normally wants many different types of stocks, bonds, and other investments as a function of its financial purposes, so also will DoD want a diverse portfolio of military assets and activities, as a function of its strategic purposes. The question is how to determine the composition of the portfolio.

Table 4.1

Parallels Between Financial- and Defense-Planning Concerns

Financial-World Concerns	Defense-Planning Concerns
Long-term capital gains	Restructured and recapitalized forces for the middle to long term
Uncertainty about when to plan to cash in gains (end of expansion cycle, retirement age, etc.)	Uncertainty about when new forces will be needed
Short-term liquidity	Near-term readiness for contingencies and other military operations
Risk management on all time scales give uncertainties about market, economy, and government regulations	Risk management on all time scales given uncertainties about future threats, budgets, national strategies, and political constraints by Congress or foreign states

Table 4.2

Parallels Between Financial- and Defense-Planning Instruments

Financial-World Instruments	Defense-Planning Instruments
Diversification	Broadening missions
Mergers and acquisition	Forming coalitions
Divestitures	"Letting go" of industrial base for obsolete capabilities
Special-opportunity investments	Addressing Achilles' heel problems
Hedging (R&D, stock options)	Hedging (e.g., R&D, prototype units)
Regular rebalancing of portfolio	Regular rebalancing of emphasis across contingency capabilities, environment shaping, and strategic adaptiveness

A business manager must revisit the portfolio continually to assess what shifts among investment instruments are indicated in light of changes in goals or the external environment. Similarly, if near-term threats seem worrisome, the secretary of defense may want to emphasize contingency capability heavily, with environment shaping coming second and strategic adaptiveness little more than a reminder not to be caught off guard if strategic conditions change. By contrast, if the greater dangers seem to be in the middle or long term, the secretary would give relatively more weight to environment shaping and strategic adaptiveness.

The strategic portfolio framework encourages decisionmakers to assemble options differently than in the past. Although secretaries of defense have long been concerned about adaptiveness and about tradeoffs between the short and long terms, their planning framework and the measures of effectiveness used in the Planning, Programming, and Budgeting System (PPBS) are inadequate. In our construct, the secretary would insist that every program review treat all three of the investment objectives—explicitly, in parallel, and with short-term versus long-term tradeoffs treated analytically. In many ways, this intuitively obvious proposal is radical. It would change the terms of debate and give the defense program and its description a more long-term and strategic character.

Arguably, the portfolio approach would be suitable even in a seemingly stable and predictable world. In an era of uncertainty, even with our best efforts to manage the environment, it is the key to

ensuring that our plans and our forces can be changed gracefully if need be.

CONCEIVING ALTERNATIVE FORCE POSTURES

This three-part adaptive framework, integrated by portfolio management, will not by itself generate alternative force postures. It will only test the options the policymaker or planner wishes to test. What should those alternatives be? Most of the current debate revolves around the two-MRC assumption, readiness, and force size as measured by numbers of divisions, carrier battle groups, and wings. But we believe the most important question facing the DoD involves modernization strategy, in the broadest sense. We see at least three philosophically different force-posture alternatives (or investment strategies) worthy of evaluation:

- *Option 1. Conservatism, Near-Term Emphasis, and Expected Evolution.* This alternative would combine caution about technology's promises with emphasis on continuity in U.S. international engagement. By and large, it would feature a posture with only marginal changes in force structure, end strength, "capital-to-labor" ratio, and overseas presence and with little modernization beyond that needed to replace aged weapon systems and platforms. It would preserve the present balance among ground, air, and naval contributions to joint operations. It would reflect a belief that today's international security environment is relatively risky, with the longer-term future to be heavily discounted. This alternative, then, would stress near-term readiness and deemphasize long-term investment. Such investment would occur and be sustained only if budget levels were high, probably higher than today's. In that case, the posture would evolve over time.

- *Option 2. Embracing the Revolution in Military Affairs (RMA).* Opposite this might be an alternative unreservedly embracing what some call the RMA. It would transcend current force configurations and increase reliance on long-range precision weapons and information dominance for waging war without deploying large traditional forces into war zones where they would be highly vulnerable to missile attack by both conventional and mass-destruction weapons. It would feature smaller,

leaner, and dispersed maneuver forces and fires, rather than large armored formations. The approach would stem from the belief that the future of warfare is relatively clear and the need to prepare for it great. It would treat the current security environment as a respite from serious threats and a window in which to invest toward what could be a more dangerous future. It would subordinate structure, readiness, and overseas presence to R&D and modernization.

- *Option 3. Tilting to the Future, Cautiously.* A third alternative would be a compromise—a "tilt toward the future." The United States would set a high priority on beginning the transition to a force structure with some of the same elements envisioned under the RMA option—in particular, more emphasis on light units capable of rapid deployment, dispersed operations, and exploitation of long-range fires from both air forces and ground or sea platforms. The priority would be on using them to address the Achilles' heel related to short-warning attacks and opposed entry. The pace of transition would be "deliberate." Individual system choices would be adjusted over time, depending on threat development and the success of newly fielded units. This alternative would maintain high levels of overseas presence for the sake of environment shaping, although it would use somewhat different forces and reduce the number of people per unit. It would trade end strength for R&D, innovation, and recapitalization, although less radically than Option 2.

The choices highlighted by these options should be central to the upcoming strategy review. Therefore, the options are good ones, although not necessarily the only ones, to test in the three-part framework we have constructed.[8]

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[8]Many possible "strategies" are currently being discussed. These include reducing forward presence and relying upon power projection from the United States; relying more heavily on allies; trimming forces to meet a reduced, 1-1/2-war criterion; and various types of deliberate disengagement. National missile defense plays a prominent role in some of the strategies.

ASSESSING THE OPTIONS

Depicting a framework is one thing; applying it with analytical underpinnings is another. We have begun but not completed that. But we can describe broadly what we envisage, starting with a notional summary assessment of alternative force postures that would be shown after a full-scale strategy review. Figure 4.7 shows this as a familiar "stoplight scorecard" in which shades of gray correspond to war outcomes ranging from bad (black) to good (white).

This figure may seem complex at first, but it is actually nothing more than a distilled result of applying the strategic portfolio framework notionally (i.e., the assessments shown are based on preliminary analysis).

- Each cell shows the assessment of a given force posture (row) for a given test (column).

- Along rows, we have alternative force postures, which fall into three groups representing the three different portfolio philosophies mentioned above. For each, we have versions for budget levels of $260 billion, $230 billion, and $200 billion.

- The columns relate to the objectives discussed earlier (war-fighting capability, environment shaping, and strategic adaptiveness). There are groups of columns for Europe, the Greater Middle East, and East Asia; within each of these there are three "cases" (A, B, and C), which test the force posture in increasingly demanding ways. The "A cases" are relatively favorable, akin to usual planning scenarios. The "B cases" involve short warning times and just-in-time rapid deployment with opposition, and the "C cases" involve having to fight our way back into a theater and recover ground. These cases are composites of the many tens of thousands of cases examined in the scenario-space analysis. There is a column summarizing capabilities for various combinations of two simultaneous MRCs. The last two columns show how well the given force posture would score in shaping the environment and in strategic adaptiveness.

The idea, of course, is to test a given force-posture alternative in many ways and to provide a unified visual display of all the major factors policymakers need to integrate. Whether such a depiction is
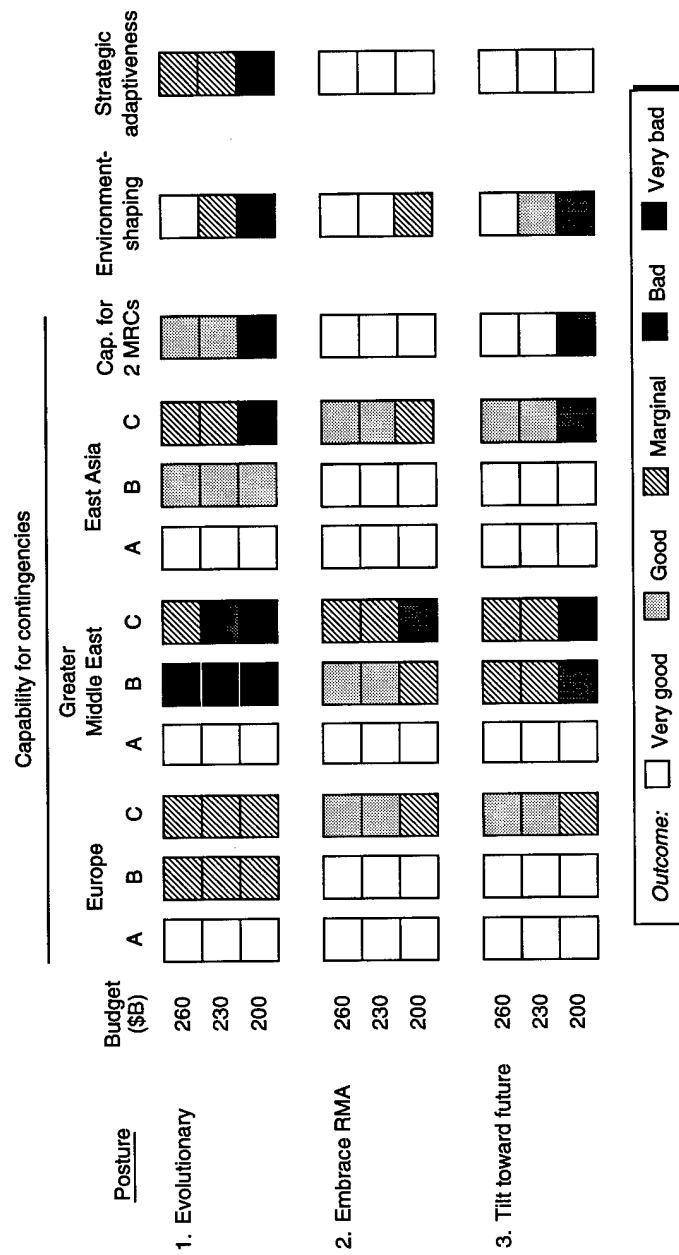
Figure 4.7—Notional Scorecard Assessment of Force-Posture Alternatives

substantive or merely creative art designed to support preconceptions depends on the depth of the analysis that decides the shade of each cell, using the methods described above. Providing that depth is the thrust of our current work.

By "adding up the colors," one can turn the stoplight chart into a graph of the overall quality of the posture versus the budget level. Figure 4.8 shows a notional result with one particular portfolio weighting of war-fighting capabilities, environment shaping, and strategic adaptiveness. By contrast with Figure 4.7, it shows a band of values (also notional) for each option, the band representing uncertainty about the effectiveness of high-technology systems and their suitability for future wars. The hypothesis suggested by Figure 4.7's notional numbers is that Option 1 (conservative evolution) may look reasonably strong for high budget levels but quite bad for lower levels. If one is confident about the "RMA options," then Option 2 looks good generally, and dramatically so for lower budget levels. Option 3, the tilt-to-the-future case, not surprisingly, is in the middle.
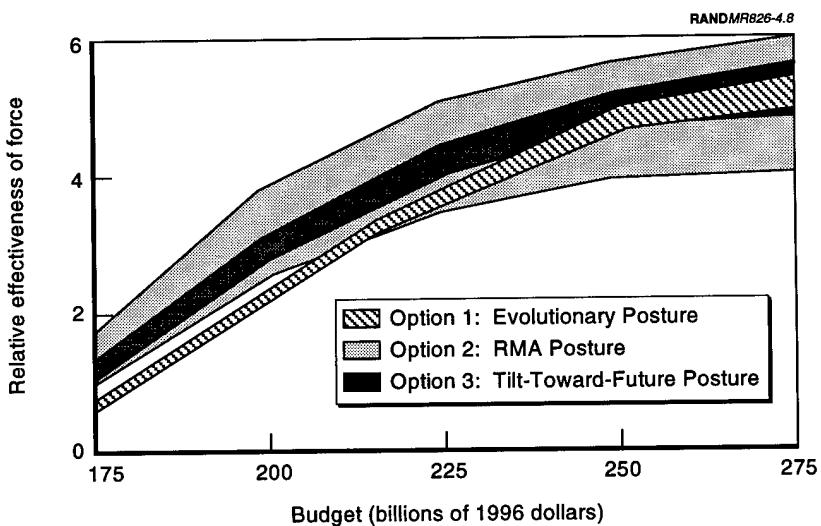
Figure 4.8—Capabilities Versus Budget Levels (Notional)

Figure 4.8 is not entirely notional. After all, a recapitalized force exploiting modern technology (e.g., precision strike, information systems, and mobility) would presumably use fewer people and be more resilient to budget changes than the current force, which evolved during the era of large-scale sustained armored conflict, small numbers of precision-guided weapons, and highly imperfect knowledge of the battlefield. Also, our analysis indicates that military capabilities will drop rapidly with further decreases in the budget unless there is a substantial reengineering and reduction of infrastructure. In any case, debating the kinds of ideas displayed here would be useful. Our point is not that we know the answer, but rather that decisionmakers should be looking for the kinds of insights we offer notionally here.

Observations

As discussed in Chapter Six, there is every reason to believe that U.S. forces will outclass those of regional adversaries for the next 10 to 15 years. Such adversaries could prove very troublesome in contingencies by virtue of their exploiting U.S. Achilles' heels and adopting so-called asymmetric strategies that play more to their strengths than to U.S. strengths. However, there are numerous measures that the United States can take in posturing its forces that would reduce vulnerabilities, many of them associated with short-warning attacks. The most fundamental difficulty for the next 10 to 15 years, we believe, relates to dealing with WMD. With this exception, contingency capabilities should be adequate. The more challenging decisions involve investment and restructuring.

The Gordian Knot: Thinning, Not Cutting, Force Structure

A core problem facing the DoD is the apparent resistance to reducing active force structure. The current structure is already underfunded, the notorious acquisition holiday has already lasted too long, and there is arguably a need to begin a fundamental, perhaps revolutionary, recapitalization. The real questions are how much and how fast. This said, we must expect that DoD's funds will remain severely limited and that even heroic efforts to reduce infrastructure and acquisition overhead will have less payoff than optimists expect, except perhaps over the long term. This implies to us that force

structure must be a significant bill-payer for what is needed. Our analysis indicates, however, that this need not be nearly so troubling as it often is. Given the enormous improvements in command, control, communications, computers, intelligence, surveillance, and reconnaissance (C^4/ISR); mobility; and lethality of systems, and given the modest nature of current regional threats, it should be possible to reengineer forces so that smaller units take on the functions that larger units (e.g., brigades taking on division functions) previously accomplished. Further, some functions (e.g., running ships) should be possible with fewer people. All of this would be normal reengineering in an industrial setting.

It follows that the terms of debate should be focused not on reducing major formations (e.g., reducing from 10 to 6 active Army divisions, or from 11 to 6 carrier battle groups), but rather on reducing end strength, changing what constitutes our major formations, and altering the active-reserve mix. It may well be that we should have 10 army divisions, but with one-third fewer people and more emphasis on light forces and long-range fires; that the "capital ships" of the future should include Aegis cruisers and arsenal ships rather than only carriers; or that active Air Force wings should be fewer or smaller than in the recent past.[9] None of these measures would constitute disengagement or disarmament, which would have harmful effects on the security environment. If the United States truly improves its posture by reengineering, we should have enough influence to convince our adversaries and allies of that, even though they might at first equate reduced numbers with disengagement.

THE NEED FOR UNUSUALLY STRONG LEADERSHIP

As we have indicated, we believe that the biggest challenges are (1) breaking with the point-scenario, threat-based planning of the past; (2) shifting the focus of the program so as to contribute more to the "strategic" objectives of environment shaping and strategic adaptiveness; and (3) beginning to transform and recapitalize the force posture for the next—and likely very different—era of warfare, which

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[9]The Air Force has already reduced the size of its fighter squadrons.

should be distinguished from merely modernizing by replacing old equipment. Such changes are unlikely to happen easily.

It is possible, of course, that the DoD is a unique organization immune to the maladies that affect other nations' armies, corporations, and government agencies. Perhaps the military Services will push ahead with all deliberate speed in making the fundamental planning and doctrinal changes that are needed. These changes are plausible if the defense budget is raised enough so that there are "new" funds. Or perhaps the Services will even sacrifice current force structure to free the funds necessary for recapitalization. However, in our view, such a rosy scenario is at best a theoretical possibility. Far more likely is that, without firm guidance to the contrary, the Services will hold onto force structure tenaciously. When budget crunches occur, one after another, important experiments will be routinely deferred or forgone, as will some next-generation weapon systems. The future will be lost through "salami slicing."

To put things a bit differently, we are on the one hand greatly encouraged by the vigor and innovation being shown in all of the Services. All the building blocks for transformation and recapitalization are visible, as the result of enlightened R&D and the most talented armed forces that the world has ever seen. However, sweeping change is painful and disruptive; it does not occur without strong top-level leadership insisting upon it. In DoD, it will require exceptional and sustained leadership by the Secretary of Defense and the Chairman of the Joint Chiefs of Staff.

The alternative may be to find ourselves in 20 years with a run-down version of a military force structure suited to the 1980s rather than a first-rate, versatile, and adaptive military force designed for the next century. If we build the latter, we stand a better chance of staying in front of would-be adversaries and wanna-be hegemons, and we can guide international and technological change. In such a case, the world might go decades without the kinds of major wars that so darkened the history of the 20th century.

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Chapter Five

NEW PRINCIPLES FOR FORCE SIZING

Paul K. Davis and Richard L. Kugler

INTRODUCTION

In what is becoming a quadrennial activity, the United States is conducting an overall review of its defense strategy and program.[1] Accordingly, the question of how to determine the size of U.S. forces has once again come to the forefront. As in 1993 when the Bottom-Up Review (BUR) was conducted (Aspin, 1993), the question is being asked: Does the United States need to be able to fight two nearly simultaneous major regional conflicts (MRCs) and, assuming it does, is the current BUR posture needed, or will something smaller suffice?

These questions, for all their importance, seem stale. They do not raise the fresh, more basic issues that also should be addressed— issues that include planning explicitly for demanding real-world peacetime operations and beginning a reengineering and recapitalization of forces for the 21st century. In this chapter, we agree that the force-sizing issue should be debated, and we offer a tentative assessment. But we do so using the new strategic framework described in Chapter Four.

We also go to some pains to separate the issue of force capability from the issue of manpower end strength. In most of this chapter, we reluctantly discuss force sizing in terms of traditional "tokens"—

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[1]This chapter is based largely on a continuing research project for the Office of the Secretary of Defense, Joint Staff, and Defense Agencies.

divisions, wings, carrier battle groups (CVBGs), and Marine Expeditionary Forces (MEFs)—even though these tokens sometimes have little to do with operations and may be becoming archaic. In the latter part of the chapter, we emphasize that force composition and doctrine will be changing: Reengineering is needed to prepare the United States for the next era of warfare, to facilitate peacetime operations with less stress on personnel, and to reduce long-term costs. In the future, it should be possible to field units with capabilities comparable to or greater than current types of units for most situations, but with significantly fewer people. Although this chapter ends up supporting a "large" force structure, comparable to today's, this by no means implies that end strength should be held constant or that the familiar tokens are appropriate for the long haul. Indeed, our view is that end strength will *have* to be cut to generate funds for modernization. The savings postulated from changes in defense infrastructure will not likely be sufficient. So, also, the familiar tokens will *need* to change as modernization and rationalization of operations take place.

With this as background, our approach is as follows: First, we take up the two-MRC issue on its own terms and discuss its rationale in some detail. We do this because Department of Defense (DoD) documents and most of the current debate focus on this standard.[2] We conclude that the standard is sensible; it is not, however, the *only* sensible standard that could be used. Indeed, it may not even be the most germane to the current world, in which U.S. forces are severely stretched as they conduct an endless stream of operations other than war (OOTW). Thus, we broaden the perspective and propose a new standard consisting of a set of three sizing criteria that should be satisfied simultaneously. The two new criteria both deal with the important issue of environment shaping. One also addresses the problem of ongoing lesser regional conflicts (LRCs) or military operations other than war (MOOTW).

Having defined new criteria, we develop a range of estimates for the force levels that they would "require." Any such estimates are neces-

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[2]For example, "U.S. military strategy calls for the capability, in concert with regional allies, to fight and decisively win two MRCs that occur nearly simultaneously. *This is the principal determinant* of the size and composition of U.S. conventional forces." (Perry, 1996b, p. 5) (emphasis added).

sarily heuristic, but the results are interesting. With these results in mind, we then discuss why having a set of three sizing criteria for defense planning would be a substantial improvement over the two-MRC standard by itself. The principal reason is that the three-criterion approach would convey a better sense of overall defense strategy, which should not and has not in practice been focused solely on near- and middle-term warfighting. It would also bring out the fact that environment shaping, including activities in support of "general deterrence," is now as demanding for force sizing as preparing for contingencies.

Finally, we turn to longer-term issues, noting the many uncertainties that preclude confidence about the force levels that will be needed a decade or two from now. We argue that the desire for strategic adaptiveness should encourage reengineering the forces. This will substitute capital for labor and, if things go well, increase rather than decrease functional capabilities for most missions. However, there are uncertainties about which missions will arise and at what level, and whether high-tech forces reliant upon precision strike and information dominance will prove as capable (or even half as capable) as now estimated. Thus, the United States should expect to revisit the sizing issue from time to time as the strategic landscape becomes more or less threatening, as potential adversaries do or do not field capabilities and doctrines undercutting our forces, and as we gain experience with information-era operations.

THE TWO-MRC ISSUE ON ITS OWN TERMS

Why Two MRCs?

The basic argument for two-MRC capability is simple: The United States should obviously be prepared to fight and win one war quickly and decisively. However, if the United States had only that level of capability, its freedom in crisis might be constrained because of "self deterrence." That is, because of a lack of reserves, the government might be dangerously overcautious about reacting to aggression. Further, if it *did* react to aggression at the MRC level, it would be virtually inviting aggression elsewhere. In a world with a variety of potential aggressors, that is not a minor issue.

Some have argued that, in the event of a second conflict, the United States could adopt one or another version of a "win-hold-win strategy"—by attempting to halt an invasion but delaying any attempt to recover territory or defeat the enemy's forces until the first contingency is completed (see Aspin, 1993; O'Hanlon, 1995). There is some logic in this view. If a two-MRC situation actually arises, such a sequential strategy might be appropriate militarily. After all, concentration of force is one principle of war, and orchestrating simultaneous wars is a difficult undertaking.

Those who would bank on this approach, however, gloss over the dangerous implications, which include giving the second aggressor time to prepare for a U.S. effort to dislodge him. The eventual counteroffensive might involve extended operations in difficult terrain with defense in depth and the prospect of a long "dirty" war with high casualties. Further, there might no longer be a core of defended-country forces to work with U.S. forces: They might have been largely defeated or worn out in the first phase. The counteroffensive burden would then be mostly on the United States. Knowing all this, a potential second-theater aggressor might be substantially less deterred by a win-hold-win force than if the United States were able to fight effectively on two fronts simultaneously. Would not such an aggressor have good reason to doubt that the United States would ever get around to defeating and dislodging him, thereby running the risk of weapons of mass destruction (WMD) long after the initial crisis "requiring" such a decisive war-winning response had wound down?[3] In answering this question, we should remember how often historical aggressors have managed to convince themselves, wrongly, that risks were tolerable because potential adversaries, such as the United States or Great Britain, would "probably" not enter the war to help the target of aggression.[4]

Finally, having two simultaneous crises or the threat of them is plausible. Does anyone doubt that if a Korean war broke out, Saddam Hussein would consider new adventures? We should also recall that

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[3]See Wilkening and Watman (1995) for discussion of WMD issues.

[4]This relates to the cognitive aspects of deterrence. For discussion and citations to both modeling work and the historical and psychological literatures, see Davis (1994), pp. 197–222; National Research Council (NRC) (1997); and the review article (Allan, 1994).

when U.S. forces deployed to the Persian Gulf in 1994, tensions were high in Korea (Perry, 1995). Qualitatively, the argument for a two-MRC capability is strong. Even if the name of the game is deterrence, two—not one—is the right number.

What is meant by having such capability is another matter: There can be no blank check here, and room for compromise exists. Understanding this situation in more detail will provide the needed link between many of those on opposite sides of the two-MRC debate.

What Does Two-MRC Capability Really Mean?

If we go beyond a purely qualitative discussion of strategy options, there is no consensus on what a two-MRC capability really means. The ambiguity reflects the fact that the forces needed to fight one or two MRCs would depend on contextual details. Figure 5.1 suggests that, with current forces, the United States would be able to fight more than two or more MRCs in "easy or moderate cases" (even with a sizable threat, such as a plausible Iraqi force), but in other cases it might find coping with even one MRC very difficult. Circumstances worsen for rough terrain (including urban sprawl), weak allies, late U.S. deployments, problems with base access, an enemy using dismounted-infantry tactics, or a situation in which the United States is already engaged in an LRC or stressful OOTW. They also depend on the size and sophistication of the adversary, but we do not consider that here. Although approximate, this figure draws upon exploratory analysis described elsewhere (see Chapter Six).

In summary, the answer to the question "How many MRCs can the United States fight today?" is and should be a firm "It depends."

Virtual Wars, Deterrence, and the Two-MRC Standard

One of the most troublesome aspects of the two-MRC standard is that it seems so unworldly. Although the threat of war continues to exist in Korea and the Persian Gulf, aggressors would be foolish to challenge the United States on the terms assumed in the definition of "canonical" MRCs, as described in the Defense Planning Guidance.

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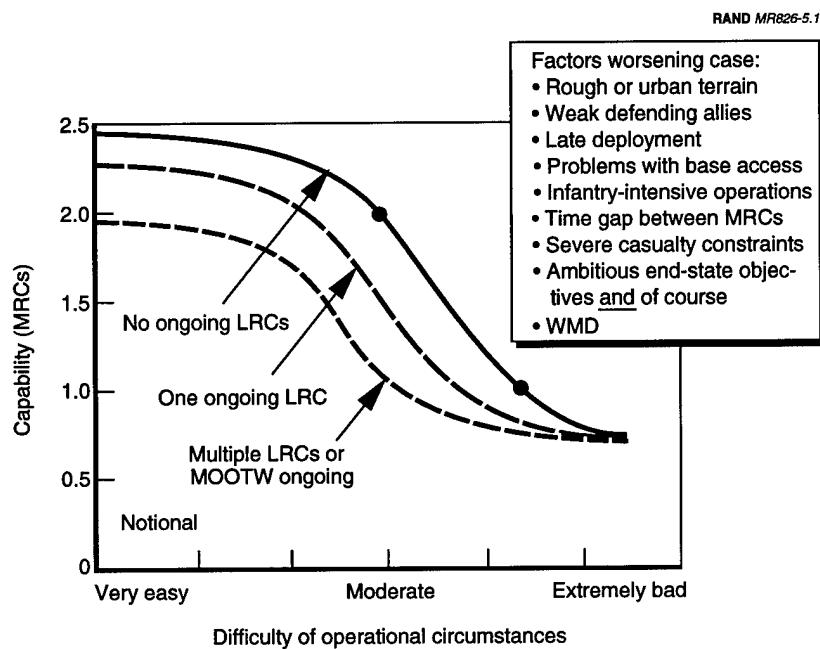
Figure 5.1—MRC Capabilities as a Function of Circumstances

Often this is interpreted to mean that having the capability for these MRCs is unimportant. This is the *likelihood fallacy*.

A better way to view the situation is that current U.S. capabilities are probably sufficient—given sufficient warning—to deter what has been for decades the primary means of large-scale aggression: an attack with concentrated armored forces. While the United States must focus increasingly on more-stressful cases (e.g., short-warning cases), the aggressor contemplating the fast, daring, highly competent invasion and *fait accompli* beloved by analysts would likely find that such operations carry severe risks of their own—risks such as overextended logistics that could leave forces isolated and vulnerable at long distances from their support base. Similarly, a "dash" by highly dispersed armored forces would be more plausible for top-quality U.S. forces than for ill-motivated regional forces, such as Iraq's, and might well bog down if dispersal meant attempting logistical movements off-road in the desert. And an aggressor contem-

plating a dismounted-infantry invasion might conclude that the defending force would be much more capable of dealing with that kind of invasion than the classic armored thrust. The WMD option might bring a massive response against economic infrastructure. Yet another point here is that most of the potential adversaries worldwide have armored forces and Soviet-style armored doctrine. Thus, if the United States can deter the preferred form of invasion, this alone would be a significant accomplishment—"a good day's work."[5] It follows that the continued ability to win decisively the "virtual wars," which will not happen because the potential aggressor knows he would fail, should be a prominent and permanent U.S. objective.

To reiterate, the United States has a strategically meaningful two-MRC capability today and should strive to retain it indefinitely. However, this judgment does not mean that the United States could fight and win two decisive MRC campaigns simultaneously in all circumstances. Neither, we judge, should there be enthusiasm for increasing military capabilities to make doing so feasible. If worst cases come to pass, the United States can deal with them at the time—mobilizing additional forces and taking as much time as necessary. Buying insurance for such worst cases (e.g., by maintaining a substantially larger active military) would be wasteful in the absence of more credible and capable threats than those existing today. Thus, our judgment is that the curve of diminishing returns is something like that displayed in Figure 5.2.[6] Our reasoning is based on the observation that, while current capabilities seem substantial relative to threat, the Service budgets appear by many measures (notably in the unreasonably small procurement budgets) to be severely stressed, and the forces are operating at punishing operational tempos. Combat capabilities, moreover, would likely drop much faster than budget levels because of the difficulties of cutting infrastructure and "overhead" within major units. Historical data suggest that—in the

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[5]An apt phrase that Maj Gen Jasper Welch (USAF, retired) used in the 1996 Defense Science Board (DSB) summer study.

[6]The points on the curve are based on assessments of the posture in 1990, currently, and under a roughly 12-percent reduction in budget without reengineering (e.g., akin to that in O'Hanlon, 1995, or to force structures generated in various RAND studies for lower budget levels). For discussion of why the curve is so steep, see Lewis (1994) or observe how drastically O'Hanlon had to cut CVBGs and procurement of advanced systems to achieve small budget savings.

RAND *MR826-5.2*
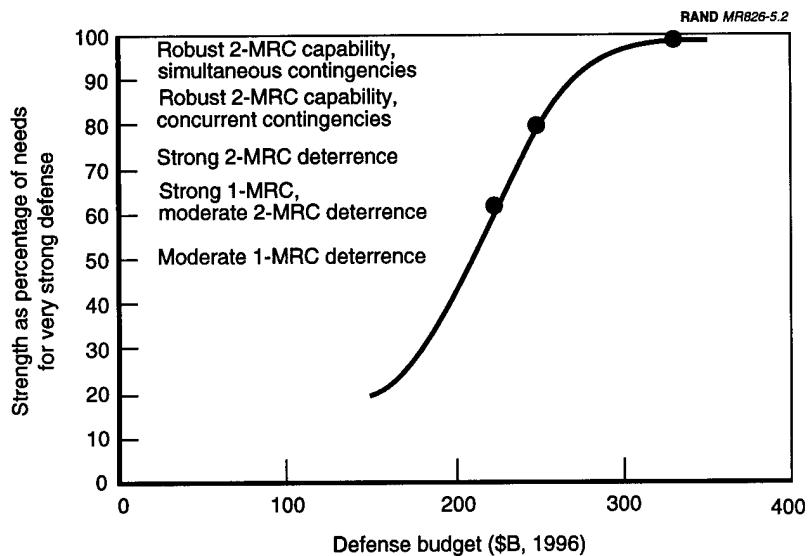
Figure 5.2—Notional Plot of Diminishing Returns

absence of reengineering as discussed later in the chapter—combat capabilities drop roughly twice as fast as the budget. What is today a solid two-MRC capability could quickly become something appreciably less.

With this background of addressing the two-MRC issue more or less on its own terms, let us now turn to a more strategic view of the force-sizing issue.

GOING BEYOND THE TWO-MRC CRITERION

A New Framework for Defense Planning

As described in Chapter Four, we recommend that the defense program be constructed using a portfolio management framework that emphasizes investments in (1) capabilities for diverse contingencies, (2) environment shaping in the three principal challenge regions (Europe, the Greater Middle East, and Asia); and (3) strategic adaptiveness. This new framework stresses *planning for adaptiveness*: both operational adaptiveness at any given time and strategic adaptiveness in response to potential changes in the world environment.

Dealing with the Near, Middle, and Long Terms

How can the framework be applied? The United States can begin by recognizing that it faces two separate but related challenges. The first is a near-term matter that requires resolution in the 1997 Quadrennial Defense Review. It is deciding how to use current U.S. forces to handle the existing geostrategic situation. This is the focus of the debate over whether the two-MRC construct should be modified. By contrast, the second challenge is mostly a middle- and long-term matter, and it is more fundamental. The second challenge is deciding how to deal with coming changes in both global politics and U.S. forces. It involves investing toward the future, perhaps with reengineering of the entire force structure and doctrine—something that no longer sounds radical when one considers the official image the Joint Chiefs of Staff now projects (Shalikashvili, 1996).

The middle- and long-term challenges do not have to be mastered immediately, but the sooner significant progress is made, the better: Major changes will take a generation to accomplish once they are begun in earnest. The accelerating pace of change in today's world is rapidly blurring the distinction between the near term and the longer term. As a result, U.S. policies toward the one will strongly affect the other. In any case, the QDR can make an important start on the broader issues—not by scaling back the two-MRC construct, as some are proposing and as many in the world would see as signs of disengagement or weakness—but by broadening the force-sizing construct, consistent with the broader framework, to guide and speed the transition toward what is needed in the longer run.

A New Construct with Three Force-Sizing Criteria

We propose a new construct for force sizing that recognizes different aspects of the broader strategic context. It is composed of three separate criteria (Figure 5.3) that can be used together to provide a more credible force-sizing formula. These criteria are:

- **Criterion 1. Force needs for environment-shaping in the three major theaters (Europe; the Greater Middle East, particularly the Persian Gulf; and East Asia) under normal conditions, when major regional wars are not being fought. The activities in**

RAND *MR826-4.3*
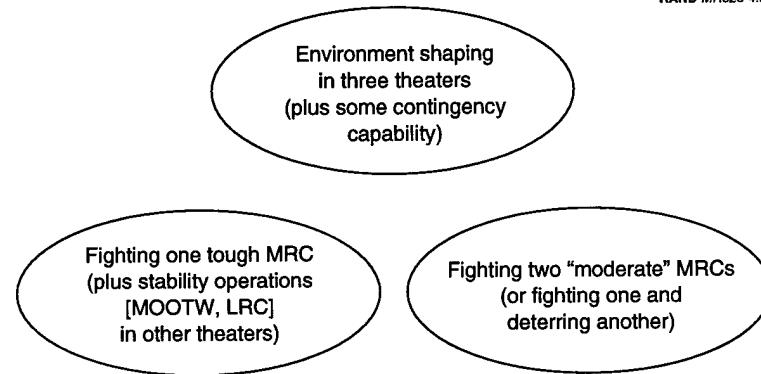
Figure 5.3—Three Simultaneous Sizing Criteria

question must contribute to "general deterrence" by heading off problems long before they become crises. Environment shaping is similar to Secretary Perry's concept of "preventive defense," but includes even more vigorous efforts toward such objectives as promoting and strengthening effective alliances and multinational integration.

- **Criterion 2. Force needs for fighting one tough MRC while keeping the other two challenge theaters stable.** This criterion deals with the wartime situation most likely to be encountered, in which *one* MRC is being fought, but other theaters must be kept stable. Another key notion here is that, when planning for a single MRC, the United States should want to make conservative assumptions about operational circumstances.

- **Criterion 3. Force needs for fighting two "moderately difficult" MRCs.** This can be interpreted as the forces that would allow the United States *actually* to fight a single MRC while effectively deterring problems elsewhere, at least with respect to relatively straightforward aggression, such as a classic armored invasion or, if necessary, defeating both invasions—perhaps sequentially in bad cases. It is central to deterrence as described above. Given this capability, the likelihood of fighting two such wars simultaneously will remain very low.

FORCE NEEDS UNDER THE ENVIRONMENT-SHAPING CRITERION

Objectives

Criterion 1 reflects the likelihood that U.S. forces will seldom be fighting major wars but will often be involved in environment-shaping activities. By this we mean activities contributing not only to peacekeeping, peacemaking, disaster relief, and minor crises, but also to the likelihood of avoiding major problems in the future. Thus, environment shaping is partly about the missions of peacetime presence and partly about *long-term* stability, which would be endangered if there were strategic vacuums encouraging counterproductive and potentially hostile force buildups and efforts to gain regional dominance. This aspect of environment shaping is often overlooked and requires substantial forces, although only some of them need be forward deployed, and not all of them need be active.

Focusing on the three challenge theaters, militarily significant U.S. forces (i.e., "capable contingency forces") will be continually deployed in these theaters, and many units in the continental United States (CONUS) will directly support them. Most of these environment-shaping activities presumably will continue in one form or another even if the Iraqi and North Korean threats fade. After all, U.S. forces remain in Europe today even though NATO has declared that it no longer faces any enemies. Why? Because the continued health and stability of Europe is a major U.S. interest: We do not want a repetition of history and the wars it entailed. Europeans also believe that a U.S. commitment and presence ensure stability.

Similarly, will U.S. forces leave Asia and the Persian Gulf if the current MRC threats in those regions disappear? Should the United States disarm its CONUS-based forces in some wholesale way? The answer to both questions is: Clearly not. If we did leave, other threats would emerge and might require very costly responses, even war. To put an earlier point differently, if international security theory tells us anything validated by history, it is that strategic vacuums are dangerous. The absence of security guarantees in the presence of power imbalances is a recipe for instability and war. We conclude that U.S. forces should continue to play major environment-shaping

roles for the foreseeable future and that the force-sizing calculus should reflect these roles.[7]

Criterion 1 therefore poses an important question: How many U.S. forces are needed to carry out environment shaping under current conditions—a still-dangerous world, in which MRCs must be deterred but in which a host of other important military activities must also be carried out? This question can be answered only via careful judgment. When all the contributing factors are added up, however, they dispel the illusion that force needs for this criterion are somehow part of lesser-included considerations subordinate to a two-MRC capability.

Fairly large U.S. force commitments are needed simply to gain the necessary amount of political influence in each theater during peacetime—not only with potential adversaries but with allies as well.[8] In Europe, the commitment and stationing of sizable U.S. forces help ensure that U.S. diplomats and generals have influential positions within NATO and a powerful say over alliance policy and strategy. The same applies in Asia, where force commitments provide tangible evidence of the U.S. determination to defend its interests and those of its allies and, hence, are a source of U.S. influence over South Korean and Japanese defense policies. So also for the Persian Gulf, where the United States likely would have little influence if its forces were not committed to the region's security. How many forces are needed to reassure and influence allies, deter adversaries, and impress neutral countries? The answer is contentious, but U.S. military leaders assert—and allied countries agree—that the forces for each theater must have a capability for independent, sizable combat operations. Not all of these forces must be forward deployed, but the combination of overseas presence and rapidly de-

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[7]The view we take here is that traditional "threats" are at present relatively moderate and waning, but we nonetheless live in a dangerous world with an unpredictable future. See Kugler (1995); Davis (1994, pp. 135–196); and Khalilzad (1996) for RAND discussions of such matters. See also Institute for National Strategic Studies (1996) for assessments by the National Defense University.

[8]This discussion draws on work regarding overseas presence done for the Joint Staff; see Chapter Eight. See Zakheim et al. 1996) for an interesting interview-based study of the value of naval presence on regional stability and U.S. interests.

ployable, CONUS-based forces committed to a region must add up to a major operational capability.

Part of the reason is that a smaller posture is often seen as merely symbolic. It can come across—correctly—as an effort to create the impression of a strategic commitment without the reality. More is involved than mere expressions of national commitment. Theater commanders need adequate forces at their disposal for a variety of practical purposes. One purpose is to conduct frequently a full spectrum of daily training activities with allied forces. This alone elevates requirements beyond what appears needed at first glance. In addition, forces are needed to pursue outreach programs with new coalition partners—the Partnership for Peace program in Europe being an example. Likewise, theater commanders need forces for patrol activities in troubled places, for responding to quick-breaking emergencies, and for carrying out normal peacekeeping missions and crisis interventions (OOTW and LRCs). All of these operations add up to a requirement for sizable forces and a high operating tempo to boot. Indeed, operational tempos have increased markedly for the Services in recent years, creating great stress and making it increasingly questionable whether the Services will be able to retain key personnel.[9]

Regional Coalitions: A Key Element of Effective and Affordable Long-Term Environment Shaping

A key element of environment shaping is the development and nurturing of alliances or virtual coalitions in each of the principal chal-

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[9]The current stress on forces due to operational tempo is a complex issue. It is not evenly felt across the Services or within any particular Service. Much of it is probably due to management practices (affected by two-MRC thinking) rather than a shortage of overall forces. For example, certain active support units have been driven particularly hard because there are so few of them. The obvious remedy is to create more such active units, even at the expense of some active combat units. A second problem has been the frequent "surprise" crises or operations that have extended duty periods. A possible mitigant for the Army and Air Force is to adopt a scheduling approach more like that of the Navy and Marines, which plan deployment periods during which the units involved may conduct normal operations or react to crises as needed. Yet another mitigant may be to reduce requirements for "normal" operations that seem to have little purpose (Sheehan, 1995). There may, then, be many remedies other than cutting back on functional capabilities or increasing force structure.

lenge regions. Security in these regions will be enhanced, and stability encouraged, if all nations have confidence that the regional structure (whether or not formalized as in NATO) can and will effectively deal with aggression, even if that means large-scale military operations by a coalition. Over the middle and long terms, then, an important goal of U.S. foreign policy should be to ensure such regional frameworks. Consider, however, the consequences for force sizing: If a key to continuing stability is developing regional alliances and virtual coalitions with capable military forces, if the United States wants to ensure that regional states put up much of that capability and bear much of the costs, and if the United States wants simultaneously to maintain principal influence (to protect its interests and ensure military competence), it will itself have to commit significant forces to each key region—and affirm this commitment with visible operations and exercises, not merely on paper.

Estimating Force Needs

As indicated at the chapter's outset, our initial estimates of force needs will be based on current forces, current doctrine, standard "tokens," and more or less standard rules of thumb. This is *not* satisfactory for the middle or long terms, because the forces need to be reengineered as discussed later in the chapter, but we need a baseline.

Using Old-Fashioned Rules of Thumb. If we use current forces and doctrine, then for each region fairly standard rule-of-thumb reasoning suggests commitment of an Army corps of about three division equivalents; a U.S. Air Force posture of about four and one-half to six wing equivalents; one Navy on-station CVBG; and one MEF, with its division-sized ground force and its contingent of aircraft. Only some of these need be forward deployed. If this is the standard for a single region, the need for the three regions together—before allowing for a rotation base, as discussed below—amounts to perhaps nine Army divisions, 14 to 18 USAF fighter wings, three on-station Navy carriers, and three MEFs.[10] With such large forces, the United States could

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[10]There is no rigorous basis for these figures. Rather, they summarize what we believe would be professional military judgment using current forces, doctrine, and practice. A corps is still the basic warfighting unit, because it has both maneuver forces and the

use some at any given time for other limited missions without seri-ously disrupting regional commitments—for example, to conduct crisis operations in the Caribbean or elsewhere. By contrast, if one were to rationalize smaller levels for the regional commitments, it would be necessary to allow explicitly for a reserve—especially since, in the real world, there appear to be "other" operations going on nearly all the time, whether involving military crises or OOTW.

Active Versus High-Readiness Reserves. Of these forces, how many need to be in active status? The answer depends on the nature of the reserve-component forces. Here, there are special issues for the Army. If the Army had high-readiness combat reserves that could be reliably used within days or weeks of call-up (in contrast to even the special 90-day readiness Army National Guard brigades postulated by the BUR), some of those high-readiness reserves could be used against the "requirement" for nine divisions. Other Services and other nations, notably Israel and Germany, depend heavily on high-readiness combat reserves. At the moment, however, the Army lacks such reserves. Until and unless they are created, the requirements for environment-shaping will need to be met largely by active forces.

If we carry along the option to have high-readiness Army reserves, force needs can be estimated as follows: Forces that are overseas deployed must be active; they must be supported by a rotation base of active forces. In addition, active forces are needed for routine cri-sis missions, whether of the OOTW or LRC variety. The remainder of the total required could be in high-readiness reserve.

The Army has two divisions (six to seven brigades) deployed in Europe and Asia. It sometimes has another brigade deployed in the Persian Gulf. The former are on permanent duty assignments (PCS), which can be sustained with approximately one division in CONUS per overseas-stationed division. The latter are on temporary duty as-signment (TDY), which can be sustained with approximately two units in CONUS per overseas unit. Thus, about five army divisions

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full range of support. For complex reasons, about 4.5 to 6 fighter wings seem to be needed for a combination of air superiority, strike, air-defense suppression, and ground-force attack. Peacetime presence, as distinct from total forces-in-being committed to a region, has been treated as depending on CVBGs. Later in this chapter, we will discuss the implications of potential changes in force composition and doctrine.

are involved in overseas deployments and the rotation base, all of which should be active. The need for a *cohesive* crisis-response force, plus some slack for other peacetime operations, suggests at least another two or three active divisions (plus Marines). This leaves one or two of the nine that might in principle be high-readiness reserves. Rather than having high-readiness reserve divisions per se, a better approach would probably be to use company- or platoon-level reserve units to fill out active divisions when needed. National Guard units could be employed quickly at that level, whereas brigade- and division-level National Guard combat units would require extensive training (see Rostker, Don, and Watman, 1994; Lippiatt et al., 1996).

Roles and Missions. Some have long argued for treating Army and Marine divisions together when considering requirements and capabilities, but there are serious problems in doing so. In practice, the Marines—working with the Navy—have significantly different capabilities to offer.[11]   They can be important elements of a "contingency capable" forward presence before air and ground forces would be welcome in a region. They have substantial early entry, combined-arms capabilities, and they are suitable for lesser contingencies and OOTW. At the same time, they lack the support structure necessary for sustained wide-area operations or for large operations inland. If the United States were zero-basing its entire armed forces and dispensing with individual Services, perhaps there could be some economies in the number of total ground forces. However, given the current baseline, we believe that a Marine force of three MEFs can be justified. We also see little basis for reducing the Marines' air component. The Marines have organized to depend heavily on tight coordination with their own air forces and have chosen to pay the price to do so (less artillery, no Multiple Launch Rocket System [MLRS] units). Although the Air Force might be asked to provide some of the support now provided by the Marines' own air forces,[12] there is no compelling reason to believe that would save a great deal of money without sacrificing functionality. Despite ideal-

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[11]For discussion of how Army light divisions compare with Marine units, see Kassing (1994).

[12]O'Hanlon (1995), p. 53, suggests that the Air Force could provide Marines with interdiction support and strike.

ism on joint matters, there *is* reason to believe that performance would suffer for complex organizational reasons.

Permanent and Rotational Assignments for Overseas Presence. The Air Force has approximately five wings in Europe and Asia, on PCS status, and one in the Persian Gulf, on TDY status. Again using the rules of thumb of one wing in CONUS for each wing deployed on PCS status and two wings in CONUS for each wing deployed on TDY status, we estimate a need for 13 active wings of the 14 total. However, if these are supporting overseas deployments, we need additional air forces for crisis response. The current posture of 13 active and seven reserve wings then seems reasonable overall.

The Navy is the most complex Service with respect to rotation-base issues. Here it is customary to count in terms of CVBGs. Roughly speaking, about 3.5 CVBGs are needed in the inventory to provide one deployed CVBG, with that force being on station only perhaps 75 percent of the time. This large and expensive rotation ratio is due to transit time, routine maintenance, major maintenance, and overhaul. It is mitigated somewhat by one carrier being home based in Japan. In principle, there could be more extensive home porting, either in Asia or Europe. It might also be possible to use a given CVBG a larger fraction of the time by having two crews ("blue-gold crews") alternate in its operation (submarines operate in this way). These matters have been debated for many years, and some innovation is plausible. In the meantime, however, Figure 5.4 (adapted from Aspin, 1993) shows the price paid for overseas deployment. For something approaching continual presence, roughly 15 CVBGs are needed (the kink in the curve is due to differences among regions and the benefit of having one home-ported carrier). While we do not recommend the major expense of adding CVBGs, our point is that, from the perspective of Criterion 1, the United States is already cutting corners with naval presence (and, for that matter, with other forms of overseas presence). This causes considerable pressure on sailors and Marines, so much so that some senior officers have suggested cutting back on overseas presence (Sheehan, 1995), which might make sense economically and in terms of personnel tempo, but would seem inconsistent with environment shaping objectives—

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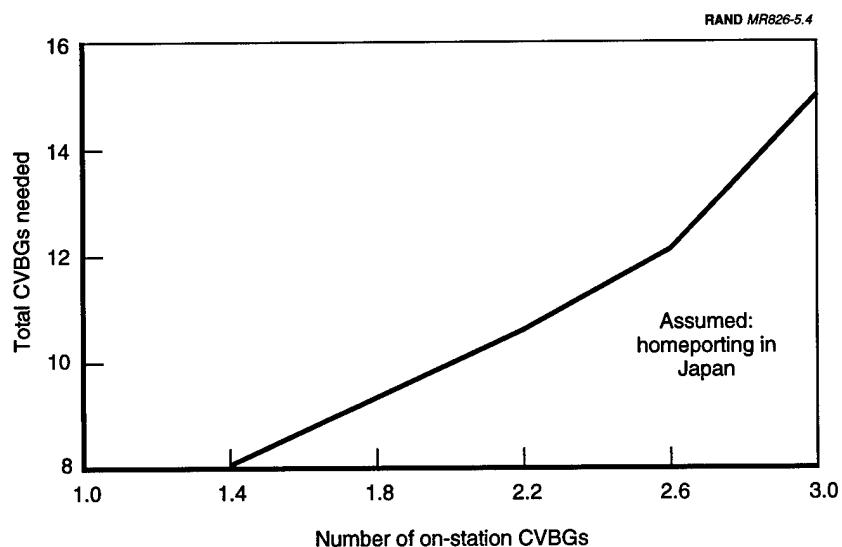
Figure 5.4—Consequences of Rotation Base for Total CVBG Requirements
as a Function of Numbers Kept on Station

unless, importantly, other equally good or better forms of presence
can be formulated.[13]

Total Force Needs for Criterion 1. If we fold in the requirements for a
rotation base, the total need for the environment-shaping criterion—
including some cohesive rapid-deployment capability—comes out
roughly as follows: First, the United States needs three divisions and
four and one-half to six tactical fighter wings for each of the three
regions, of which enough must be active to support the overseas de-
ployments. It also needs one CVBG and one MEF per region avail-
able on station a large fraction of the time. With this reservoir, rou-
tine crises, ranging from peacekeeping to disaster relief or a small

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[13]Numerous ideas have been proposed, including permanent overseas stationing of
Air Force squadrons (some of which is in practice happening already) and advertising
"virtual presence" of Air Force aircraft that can deploy quickly worldwide. Frequent
exercises can help in this regard. O'Hanlon (1995) argues that the peace operations
should count toward "presence" and can therefore be used to rationalize smaller
traditional CVBG deployments. Such possibilities are addressed in Chapter Eight.

LRC, can be handled by whichever units are appropriate. The effects on any given region's available forces would be modest and not particularly critical in the absence of major international problems.

All of these estimates are inherently soft, so Table 5.1 summarizes results showing nominal estimates and a range of reasonable values for the total.[14] None of these include low-readiness reserves, including the enhanced-readiness Army National Guard units the BUR mandated. Arguably, environment shaping would be well served by having a substantial reserve that could be ready in a matter of months. However, another view is that it would be more effective to recruit and train new forces if the need to do so arose. This reflects the belief, based on historical experience, that low-readiness reserve units may not be suitable for combat even after significant training. It may or may not be valid in information-era warfare, in which technical sophistication and experience will be worth a high premium.

These are all "modal estimates." Depending on judgments about how many trouble spots will exist in "normal" times (akin to Haiti

Table 5.1

**Estimated Force Needs Under Criterion 1
(constrained by current doctrine)**

	Army Divisions[a]	Air Force Wings	Navy CVBGs	MEFs
Active	7	13	12[b]	3
Reserve	2	7	1	—
Total	9[c]	20	13	3
Range of Total	8–10	18–20	12–15[c]	3

[a]Plus three separate brigades or regiments (Perry, 1996b, p.146).

[b]A better posture would probably involve a mix of CVBGs and other contingency-capable surface action groups, adding to a total of 15.

[c]Postulated high-readiness combat reserves available within days or weeks. Until and unless such units are created, these should be treated as additional active forces.

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[14]All of the figures should be interpreted as involving "equivalent units," since the services use different organizational arrangements in different circumstances.

and Somalia) and depending on how much force is considered to be a "substantial and credible" capability to deter would-be aggressors or competitors in the various regions, it is possible to come up with larger or smaller estimates. Another possibility for reducing "requirements" is to dual-task units. We prefer not to muddy the arithmetic by assuming dual-tasking. Instead, we assume separate nominal commitments and treat them as providing a kind of pad that can be used instead of providing explicitly for reserves for unanticipated crises.[15]

The bottom line is that overseas presence and rotational dynamics alone create a need for most of the current active-duty posture. The requirement for maintaining strategic influence reinforces this conclusion. To be sure, this calculus is open to interpretation at the margins. The key point, however, is that, **given levels of current U.S. forces overseas, something close to the BUR posture—in terms of units, not necessarily end strength—is needed, even if no major regional wars are on the horizon.**

This stems not from concerns about OOTW and LRCs, although those are factors, but from the need to commit significant forces to each region to maintain appropriate influence related to long-term security and stability. Token forces are not enough. Given the forces we suggest, OOTW and LRCs could be handled without a special set-aside for such purposes.

Other Implications of the Environment-Shaping Standard

Another implication of the environment-shaping criterion is that a somewhat different set of defense program priorities may be necessary to support Criterion 1. Under the two-MRC construct, the only programs that easily qualify for funding are those that help prepare for the standard MRCs in the Gulf and Korea. Other programs typically fall by the wayside because they are deemed marginal to DoD's most important goals. Yet many of these programs make great sense when environment shaping is taken into account. Examples include

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[15]Other analysts are using the tempo of OOTW and LRCs, along with presence, rotation-base, and training requirements, to generate estimates of force needs. It is likely that they will turn out to be similar in magnitude to those we provide here.

(also see Chapter Seven) programs for infrastructure, foreign military interactions, security assistance, and prepositioning—most of which are inexpensive yet—except for the Persian Gulf and Korea—chronically underfunded because they lack important status in U.S. defense strategy. Criterion1 helps call attention to them without "cooking the books" against MRC programs that also make sense.

To cite another important example, the two-MRC standard has contributed to the personnel-tempo problem by putting higher priority on active combat forces than on active support forces. However, the reality of current operations suggests that certain support units that are routinely essential for OOTW and LRCs should be in the active force, even if that means reduced readiness, on the margin, for combat. Finally, elevating the importance of continual OOTW and LRC operations strongly supports an approach to personnel management more like that of the Navy and Marines than that of the Army and Air Force. Roughly speaking, Navy and Marine personnel have relatively clear schedules for being deployed overseas. When they are so deployed, they can use the time for normal peacetime presence, training, experimentation, or—if the occasion arises—contingency operations and OOTW. When not deployed, units need not be at a high level of readiness.[16] Some Air Force and Army units in the United States could have identified periods of high readiness for deployment if needed. This might not be appropriate for other units, all of which need to be in constant readiness (e.g., airlift and long-range bombers).

FORCE NEEDS UNDER A ONE-MRC STANDARD

Objectives

Criterion 2 calls for forces adequate to fight a single MRC while maintaining a stabilizing presence elsewhere. Many observers immediately assume such a criterion would permit a sizable cut in forces—if not by half, then nearly so. However, if the United States adopted a one-MRC standard, it would surely want to define the one MRC to be stressful. Otherwise, there would be no slack to deal either with the bad cases we have noted or with OOTW and LRCs that

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[16]Related issues are discussed in the Commission on Roles and Missions (1995).

might be going on when the MRC began. In addition, even if the war were of only moderate difficulty (adequate warning, capable allies, and so on), complications would arise because U.S. forces would need to keep other theaters stable while this MRC campaign was in progress. Commitments in other regions might be shirked to some extent, but not fully, and crises might arise. For example, a new Persian Gulf war might erupt, and large U.S. forces would be required to converge on the scene. Concurrently, other U.S. forces would have to carry out normal peacetime operations in Europe, while maintaining a deterrence watch in Korea and performing other missions in Asia. It would not be at all surprising to see tensions rise in one of the other regions, in part because adversaries would be observing U.S. difficulties elsewhere. How many forces are needed, then, for this standard?

Estimating Force Needs for Criterion 2

One way to estimate force needs is to begin with the BUR building block as the force needed for a single MRC: about six active Army and Marine divisions, ten Air Force wings, five CVBGs, and other forces. However, logic suggests that the United States would want to have forces adequate to retaining strategic influence and performing a cut-back version of regular missions, including stability missions, elsewhere. This would suggest an additional two to four Army and Marine divisions, three to ten wings (the larger number corresponding to a win-hold-win version of a "one MRC strategy"), and five to six CVBGs (allowing for rotation base, maintenance, and overhaul).[17]

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[17]Some have argued (e.g., O'Hanlon, 1995) that fewer CVBGs are needed because land bases for aircraft can be counted upon. It is true that suitable or adequate bases exist in the general vicinity of a high percentage of plausible contingencies (something well established by past studies). However, *timely* political access to those bases (well before D-Day) is quite another matter. Further, there are uncertainties about the effectiveness of the infrastructure at some bases and about the effectiveness of host-nation support. If the United States has to deploy substantial support forces and infrastructure, the rate at which land-based air forces will be deployed and sustainable will be reduced. On the other hand, it is easy to imagine circumstances in which naval forces are not in the right region at the right time, while Air Forces are able to deploy quickly to good bases with prepositioned materials. In our view, prudent force planning should hedge on these matters: Airpower is critical; the United States has two ways to achieve early airpower in a contingency, and it should savor and preserve that flexibility.

If this number seems excessive, consider once again the constant stream of "normal" operations that U.S. military forces are called upon to conduct, e.g., crises in the Caribbean or disaster evacuations in the Pacific. Naval forces (both Navy and Marines) in particular would be needed. Another point is that the MRC might arise when some forces are tied down in an LRC or in OOTW of sufficient importance that the United States could not simply "back out."

This calculation assumes the appropriateness of the BUR building block. If the contingency were more stressful (Figure 5.1), ground-force requirements could go up dramatically. It should be remembered that the United States sent ten divisions to each of the last three regional wars. Further, the United States' preferred high-tech approach to war will not work well in infantry-intensive situations, such as urban sprawl or jungles. Thus, a better estimate for Criterion 2 would be something like 12 to 14 Army and Marine divisions, 18 to 21 Air Force wings, and 9 to 12 CVBGs. Perhaps about one-third of the division and wing equivalents could be in high-readiness reserves, probably assimilating into active units at a low level of organization (Rostker, Don, and Watman, 1994). We do not find it persuasive that counteroffensives have to be accomplished on any particular time scale.[18] Table 5.2 summarizes the resulting estimate. Its similarity to the BUR force was not intended but is not accidental: Many reasoning streams made the BUR force (or even the Base Force before it) appear reasonable to the Office of the Secretary of Defense and the Joint Staff.

Thus, with current forces and doctrine, Criterion 2—fighting only one regional war while keeping the other two theaters stable—yields a strategic requirement only somewhat smaller than the BUR posture assuming an "easy" MRC, and a more prudent approach reconfirms or exceeds the BUR posture except for issues of the active-reserve mix.

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[18]For earlier discussion of DoD assumptions on these matters, see National Defense Research Institute (1992).

Table 5.2

**Estimated Force Needs Under Criterion 2
(constrained by current doctrine)**

	Army Divisions[a]	Air Force Wings	Navy CVBGs	MEFs
Active	8	12	10	3
Reserve	2	8	1	—
Total	10	20	11	3
Range of Total	8–12[c]	18–21	11–13[b]	2–3

[a]This does not count two separate brigades.

[b]A better posture would probably involve a mix of CVBGs and other contingency-capable surface-action groups, adding to a total of 15.

[c]Postulated high-readiness combat reserves available within days or weeks. Until and unless such units are created, these should be treated as additional active forces.

FORCE NEEDS UNDER A TWO-MRC STANDARD

Objectives

We will not go through the detailed arguments for Criterion 3, because the two-MRC standard is the baseline, and it seems to be generally accepted that the BUR force posture is at best adequate to deal with it. It is worth noting the following, however: If the two MRCs are of the "easy" variety, the United States could get by with smaller ground forces. Allied ground forces, with some contributions from the United States, plus heavy use of Air Force and Naval air power, would suffice. It is also not evident that ten CVBGs are needed for power projection in these scenarios, because land-based air forces in at least one theater would probably have adequate access to bases. Thus, one can generate cases in which the current force structure is not even needed for the two-MRC standard. Indeed, while many war games of such contingencies "involve" the full BUR force structure, inspection reveals that not all of the ground forces or naval forces were needed.[19]

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[19]How many are apparently needed depends on a variety of analysis parameters that can be manipulated over wide ranges. For a simplified explanation, see Chapter Six.

What matters, however, is that contingency planning that addresses only easy cases would be irresponsible. If even one of the two MRCs is difficult (e.g., late warning, forced entry, unreliable allies, *fait accompli*), the current force posture might prove marginal at best.

Estimating Force Needs for the Two-MRC Standard

Authors of the two-MRC standard had in mind that forces might be rationalized for fighting two wars but would in fact be used for all sorts of lesser-included purposes. Thus, they did not want to allow for any strategic reserves or to add forces for overseas presence, specialized missions, or small contingencies. Those missions were to be performed with the forces justified by the two-MRC standard.

It seems that some of the requirement for the second MRC could be accomplished by using the postulated high-readiness Army forces available in days or weeks. Aside from that, however, we have no reason to modify the estimates found in the BUR. The results are shown in Table 5.3.

SUMMARY ESTIMATES OF FORCE NEEDS

In summary, Table 5.4 provides some estimates of force requirements as a function of criterion and what might be called "con-

Table 5.3

**Estimated Force Needs Under Criterion 3
(constrained by current doctrine)**

	Army Divisions[a]	Air Force Wings	Navy CVBGs	MEFs
Active	8	12	11	3
Reserve	2	8	1	—
Total	10	20	12	3
Range of Total	10–12[c]	18–22	11–14[b]	3

[a]This does not count two separate brigades.

[b]A better posture would probably involve a mix of CVBGs and other contingency-capable surface-action groups, adding to a total of 15.

[c]Postulated high-readiness combat reserves available within days or weeks. Until and unless such units are created, these should be treated as additional active forces.

servatism." It is by no means rigorous, but we believe it provides a fair range. Roughly speaking, the "medium" cases correspond to the discussion above, but we have made some adjustments that fine-tune assumptions about reserve-component forces. A key point here is that only Army active combat forces should be considered "real" under current operational and organizational practices.[20] By contrast, Navy, Air Force, and Marine reserve-component combat forces are more reliably counted upon in planning.

The principal conclusions from Table 5.4 are as follows:

- The overall size of the current force—if constrained by current ways of doing business—seems reasonable. Our estimates vary only on the margin, and we have no basis for confidence that they are better than the baseline BUR posture.

- There is a remarkable consistency among the estimates under the three criteria: Differences exist, but they are marginal. This contrasts with the situation during the Cold War, when contingency requirements were large enough to leave other matters to be treated as lesser-included cases with respect to force sizing. Figure 5.5 illustrates schematically the change that has occurred.

- There is a reasonable argument for an increase in Navy forces and, certainly, an argument for no further reductions. We are persuaded that Naval forces are especially valuable for environment shaping and are important—not merely nice-to-have—hedges against contingencies in which the United States does not have early access to key airfields, ports, and other facilities. Such contingencies are plausible, primarily because of the ambiguities of warning and political constraints.

- There is an argument for creating high-readiness Army reserves that could be employed within days or weeks. If such units could be created, some reduction of active units would be feasible.

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[20]As noted earlier, the BUR called for 15 Army National Guard combat brigades to be given increased readiness for employment within 90 days. It is not clear to us that this goal has been achieved (General Accounting Office, 1995) or whether it will be. The Army has recently taken a number of measures that will help, however, including assigning regular-Army commanders (Graham, 1996). Other nations, notably Germany and Israel, have and rely upon high-readiness army combat reserves, with readiness measured in days rather than months.

Table 5.4

One Set of Estimated Force Needs As Function of Criterion and Conservatism, Assuming Current Types of Major Formations (Army Divisions/AF Wings/CVBGs/MEFs)

Force Needs as a Function of Conservatism	Standard 1[a]				Standard 2[b]				Standard 3[c]			
	Div	TFW	CVBG	MEF	Div	TFW	CVBG	MEF	Div	TFW	CVBG	MEF
Low												
Active	6	12	11	2	6	12	10	2	8	12	9	2
High-Readiness Reserve[d]	3	6	1	1	2	6	1	1	2	6	1	1
Medium												
Active	7	13	12	3	8	13	10	3	8	12	11	3
High-Readiness Reserve[d]	2	7	1	0	2	7	1	0	2	8	1	0
High												
Active	10	15	14	3	8	14	12	3	10	14	12	3
High-Readiness Reserve[d]	0	7	1	0	4	8	1	0	2	8	1	0

[a] Standard 1: Environment Shaping (Including "General" Deterrence).

[b] Standard 2: One MRC (plus other operations).

[c] Standard 3: Two MRCs (plus minimal other operations).

[d] Reserve-component forces that can be employed effectively within days or weeks. The Air Force, Navy, and Marines have such reserve-component forces. The Army does not, and the Army National Guard combat units, even those mandated by the BUR to be employable within 90 days, are not currently suitable. Until and unless suitable units are created, Army active needs should be increased accordingly.

RAND *MR826-5.5*

Force needs for military contingencies
(capabilities, not necessarily proportional to manpower)
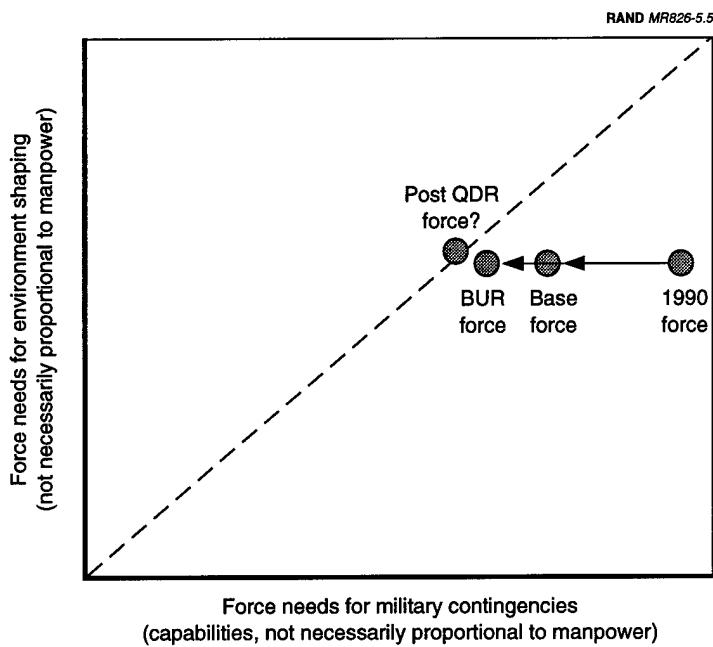
Figure 5.5—Environment Shaping Becomes a Relatively Stressful Criterion

Figure 5.6 compares our range of estimated needs with the force levels of the 1990 posture, the Base Force, the BUR, and a Brookings posture proposed by O'Hanlon (1995). We have taken for our estimates (those marked DK), the largest of those generated by the three criteria. Our estimates for Army needs would be a bit smaller if the high-readiness Army reserve forces discussed above came into being. The most notable points about Figure 5.6 are probably the differences in views regarding Navy needs. O'Hanlon argues for a substantially smaller Navy. However, we believe further reducing naval presence would be a serious error. Otherwise, the results are clear: **We believe that the BUR force levels are at or close to the floor—so long as one works within current formations and doctrine and looks at units rather than end strength.**

As discussed below, what is needed is not a scaling back of what exists today, but rather a reengineering of the posture.

RAND *MR826-5.6*
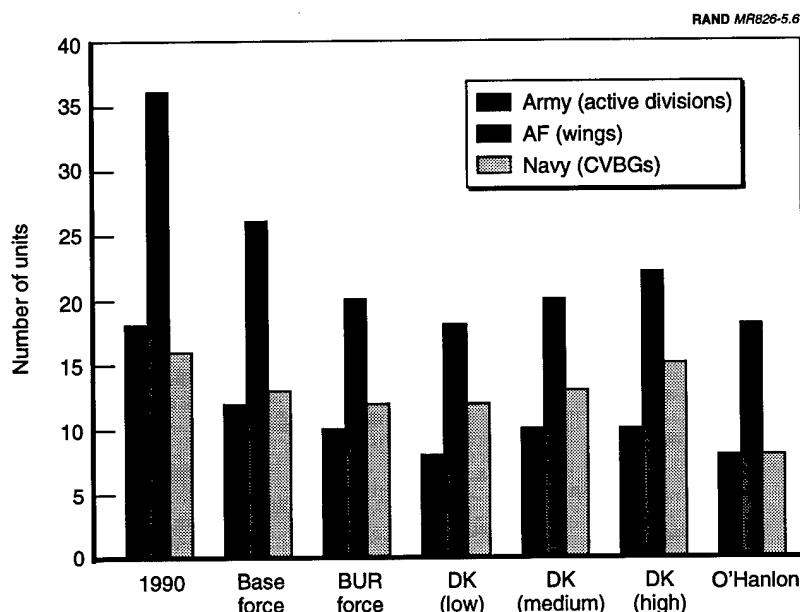
Figure 5.6—Comparison of Force Levels

CAN ALLIES CONTRIBUTE?

An obvious omission in the preceding material is discussion of allies and the extent to which their contributions could alleviate U.S. force requirements. The BUR has been appropriately criticized for having discussed allies almost not at all (subsequent defense reports at least mention them). We have the following suggestions.

Correcting the Baseline Description

Whereas the BUR suggested to most readers that the United States did not need allies for the basic two contingencies, the reality is arguably different. It should be recognized that the missions of rear-area security, post-victory disarming of the enemy, and occupation and stabilization create huge demands for ground forces—demands that cannot readily be met by substituting high-tech C^4/ISR, aircraft,

and missiles. There are three sources of forces for these missions: the regional allies being defended (e.g., South Korea and the Gulf states); major allies, such as the United Kingdom, France, and Germany; and other allies of convenience (e.g., Egypt and, in 1991, even Syria). If the initial phase of war was disastrous, the defended ally's forces might be in poor shape. In any case, requirements over time may be conceived more or less as shown in Figure 5.7. Note that the total need grows substantially with time, but much of the growth is for forces needed for the "other" missions. It is quite unlikely that the United States will have the force structure needed. It did not have such forces in Desert Storm. Thus, the baseline image should be that the BUR force structure already assumes, implicitly, the availability of quite substantial allied forces, particularly at later times—weeks or even months after the initial crisis.

A Role for Major Allies

As discussed elsewhere, there are many strategic reasons for wanting to plan more explicitly with our major European allies (notably the United Kingdom, Germany, and France) for security problems that extend well outside the confines of Europe.[21] This, however, raises the issues of what role these allies could play if they chose to contribute and how much the United States would want to depend on them. As a follow-on to Figure 5.7, Figure 5.8 suggests a notional "requirements curve" for the use of such major allies.

Division of Labor

Although the process of enlisting major allies in the challenge of defending common interests outside Europe is just starting, the notion we present here seems reasonable. The next question is how to share the burden. Table 5.5 suggests a commonsense approach to recognizing that, while the United States and major European nations have shared interests both inside and outside of Europe, notably the Persian Gulf, the interests are not equal. The suggestion is that we settle on something like a 75–25 percent split, with Europeans having

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[21]See Gompert and Kugler (1996) and Gompert and Larrabee (1997).

RAND MR826-5.7
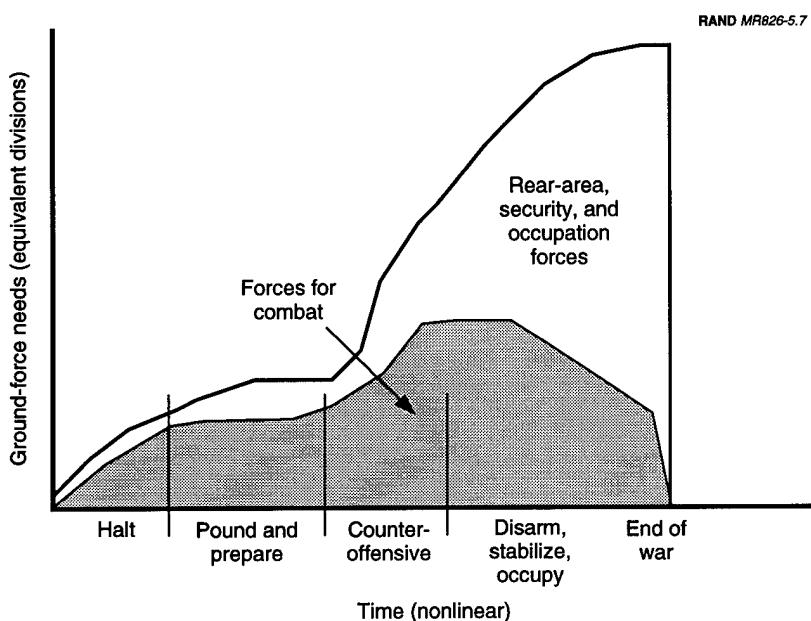
Figure 5.7—Requirements over Time and the Role of Allies

the larger burden in Europe, and the United States having the larger burden in Southwest Asia.[22]

ADVANTAGES OF A THREE-CRITERIA APPROACH TO FORCE SIZING

By considering Criteria 1 and 2 in parallel with Criterion 3, the effect is to take pressure off Criterion 3 by itself. It does not have to be the sole rationale for force-sizing. A three-criteria construct also allows U.S. force planning to view the prospect of two concurrent MRCs in proper perspective as one important part of the defense agenda, but not the only part.

The message Criteria 1 and 2 impart is that the United States needs a sizable posture for the simpler but demanding tasks of carrying out

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[22]See also Huber and Davis (1996) for an estimate of NATO force requirements.

RAND *MR826-5.8*
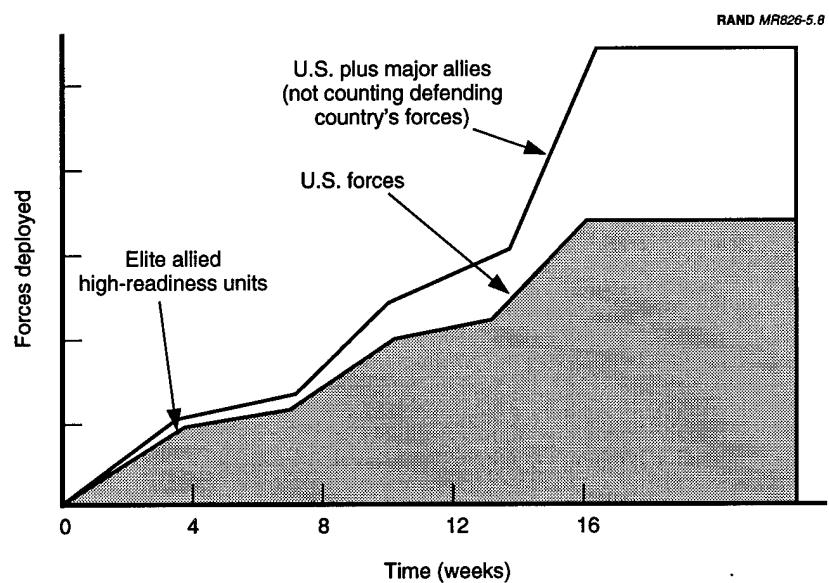
Figure 5.8—A Potential "Requirements" Curve For the Participation of
Major Allies

Table 5.5

An Illustrative Burden-Sharing Formula

	United States[a]	Major Allies[b]
Europe (lesser contingency)	25	75
Europe (major contingency)	50	50
Persian Gulf (major contingency)	75	25
Southern Europe	25	75
Near East	ad hoc	ad hoc

[a]Special burden for C^4I/ISR, Navy, and lift.

[b]Special burden for infra-structure in Europe.

global peacetime missions and being prepared for a single MRC without denuding the U.S. regional presence elsewhere. Criterion 3 reinforces this conclusion because it requires two MRC building blocks that—given current theories of contingency requirements—together could consume the entire active posture, plus major reserve-component assets.

As implied above, a key feature of our construct is that it puts forth the need for an overall joint force that is comparable to or only somewhat smaller than a two-MRC force as an enduring strategic principle, not a transient response. That is, this requirement will not go away if the two MRCs that are most plausible today—war against Iraq and North Korea—disappear. Obviously this need would not exist in the extreme case in which the risk of two MRCs could be absolutely ruled out. In this event, Criteria 1 and 2 would apply and might yield a somewhat smaller force. But today's world is not yet this stable, and tomorrow's world is also unlikely to be this stable.

A major consideration in mandating the multitheater principle is that force planning must take into account not only current geostrategic conditions but the future as well. Even if the United States does not face two regional enemies at a given time, it must maintain a sufficient capability to respond if two such enemies appear. The reason is that global politics can change faster than U.S. forces can be built: For example, Iraq became an enemy almost overnight. Moreover, a two-theater warfighting posture is needed to deter potential predators from taking advantage of perceived U.S. weakness. And a posture capable of defeating two regional aggressors provides some margin for being able to cope with future threats that might be larger than anticipated. In short, a two-MRC posture is the best guarantee that the two existing threats will not erupt into war and that, after these threats fade, new threats will not arise to take their place.

In our new construct, another main function of the two-MRC criterion is not only to reaffirm the need for multitheater deterrence, but also to determine what defense programs will be most needed to deal with two simultaneous wars. Being prepared for two MRCs has important implications for determining the size and character of strategic mobility programs so that demanding, fast-paced deployment plans can be carried out. It also calls for Air Force reserve

component fighter wings, Army logistics forces and combat brigades, and other specialized assets that are ready enough to be deployed quickly. All of these programs merit funding under the two-MRC criterion, because they are unlikely to get adequate funding elsewhere.

Adopting Criteria 1 and 2 may provide elbow room to be more creative about addressing force requirements for the two MRCs. In both the Persian Gulf and Korea, a key risk is that "Achilles' heels"—e.g., lack of prompt reinforcement and adequate smart munitions, plus vulnerability to WMD—would result in early reversals. The prospect of these reversals, and the subsequent need for big counterattacks to recover lost ground, plays a large role in elevating force requirements so high that the entire U.S. active posture must be committed to defeat two medium powers, neither of which possesses a large storehouse of modern weaponry. To the extent that these early vulnerabilities can be reduced, the need to field this many forces may decline. The United States thereby would have less reason to fear that, in the actual event, it would have so many forces committed in the Gulf and Korea that nothing would be available for deployment anywhere else.

Likewise, the United States would have greater scope for recruiting allied forces without fearing undesirable offsetting cuts in its own posture. At the moment, a drawback of U.S. defense strategy in the Persian Gulf is that an MRC campaign there would be mostly a unilateral U.S. operation. The NATO allies are slated to play only minor roles. The result is the appearance of unfair burden sharing, because the oil being defended is needed by the entire industrialized world. This situation seems unlikely to endure: Sooner or later, a public outcry will be heard in the United States. A stronger European role in Gulf defense missions is needed not only to prevent a domestic backlash in the United States but also for another purpose: At the moment, U.S. forces in Europe are slated to play roles in the two-MRC deployment plan by deploying to the endangered theaters. Inevitably, this has the effect of raising questions about their commitment to NATO and Europe. If additional allied forces are committed to Gulf missions, these U.S. forces will be freed to play greater leadership roles as NATO enlarges and prepares for other projection missions. If the consequence of our new framework is to get better

burden sharing and stronger U.S. leadership of key alliances, so much the better.

In summary, the proper step for the near term is not to abandon the two-MRC construct in reaction to budgetary pressures. Rather, the proper response is to build a broader construct that encompasses the larger purposes the U.S. posture serves. This step will help provide a better frame of reference for deciding upon force levels. The BUR posture may not be sacrosanct, but neither is it overly endowed when the full set of U.S. strategic requirements—which go beyond preparing for two MRCs—is taken into account. This chapter's new construct of three force-sizing criteria helps draw attention to this reality, while also providing a better basis for defining how U.S. forces will be used both in the most difficult case and in the situations most likely to be encountered.

LONGER-TERM FORCE SIZING: POTENTIAL IMPLICATIONS OF NEW FORCES AND DOCTRINE AND OF CHANGES IN THREAT

In most of the preceding discussion, we have assumed that the force needs had to be achieved using the familiar building blocks of current forces: divisions, wings, CVBGs, and MEFs. That would be an improper assumption for the middle and long terms. Further, we have adopted the style of "requirements analysis" rather than the "capabilities analysis" style that we prefer (because requirements should be established only after understanding curves of diminishing return for alternative investment options). In this section, we relax some of the assumptions and look more critically at what could be done with new technology.

Building Forces for the Future, not World War II

Future force structures will be affected by the next era's warfighting concepts, which almost certainly will call for fewer but differently arrayed forces for any single contingency. Presumably these forces will deploy in a hurry, will be highly dispersed, will rely on information-dominance and deep-fire systems (tactical aircraft and long-range missiles), and will need to be able to deal with WMD. They will be capable of fighting and winning quickly through the use of high

technology, while also being capable of sustained operations—perhaps even difficult, infantry-intense operations. This is not the posture of 1997. The problem with the existing posture is that it is not suited for the new era of warfare. Until the United States has more experience with advanced operational concepts and systems, it will be hard-pressed to judge how many forces are needed and in what mix.[23]

Substituting Capital for Labor (Reducing End Strength)

A central issue in defense planning should be how quickly to begin the substantial reengineering of forces needed. On the one hand, we need the reengineering to create suitable forces. Reengineering is also essential for cost-saving reasons. Further, it is called for by the simple logic of technological and military developments. Given incipient and projected improvements in our ability to locate and destroy enemy forces at longer ranges, it should not take as many ground-force personnel to accomplish most military missions in the future (the exceptions being infantry-intensive operations, such as counteroffensives in difficult terrain, stabilization after victory, and rear-area security in the absence of reliable allies). Some images of the future can perhaps be seen in the air operations of Desert Storm, the Marines' Sea Dragon experiments, and more recent Army experiments and advanced doctrinal concepts.[24] A key point here is that future operations will be truly joint, with ground forces depending on and exploiting long-range fires (i.e., air power and long-range missiles and even guns mounted on ships).

What might a future, reengineered Army look like if changes begin now and are focused on exploiting building blocks that already exist

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[23]For discussion of future-force concepts, see Shalikashvili (1996), NRC (1996), DSB (1996), and periodic posture statements by the Service Chiefs of Staff. See also Barnett (1996) for a coherent description of work on the "Revolution in Military Affairs" by the Office of Net Assessment. Johnson and Libicki (1996) discusses the role of information dominance and includes a short statement by retired Admiral William Owens (then Vice Chairman) regarding his influential vision of future warfare.

[24]For an excellent example of the tangible impact of information-era capabilities—and tensions—see U.S. Marine Corps (1996).

or are soon coming into the structure?[25] The following list provides one strawman image, which is our effort to construct a balanced future Army with a mix of armored units (more like current armored cavalry regiments than current divisions), mobile missile units exploiting MLRS and its successor with the Army Tactical Missile System and the Brilliant Anti-Tank munition, helicopter mobility, air-to-ground capability with attack helicopters, and infantry.[26] The list is for the active Army, assuming it is organized for brigade operations in wartime corps and Joint Task Forces. The range in number of units reflects the fact that we are considering the potential effects of sizable budget cuts.

- 2–3 modern-mobile-missile and infantry brigades

- 2–3 armored cavalry regiments

- 2–3 air-cavalry combat brigades

- 2–3 air-mobile/air-assault brigades

- 2–3 enhanced-capability rapid-deployment brigades

- 4–6 mixed-mechanized infantry brigades (smaller)

- 6–12 mechanized brigades and 75-percent fill, with high-readiness reserves for roundout

- 2 RISTA brigades (with national links)

- 2 theater-protection brigades (air defense, theater missile defense, CW/BW, rear-area security, etc.).

A plausible goal might be something like a 20-percent reduction in end strength, although those remaining might need to be paid more than today's soldiers. Note that the list above specifically includes a substantial reserve-component element of a more traditional variety

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[25]For a sampling of the many concepts and experiments the Army is currently pursuing in thinking about the future, see Reimer (1996), Killebrew (1996), and DSB (1996).

[26]We thank colleague Jed Peters for his assistance on this. For an interesting brigade-sized joint-task-force concept designed for early entry, see the TRADOC discussion of "Task Force Griffin" in Volume 2 of DSB (1996).

because a prolonged war would likely not lend itself well to a purely low-density high-technology approach.[27]

What about the other Services? Naval forces can almost surely be operated with fewer personnel than in the past (as recognized in Navy experiments with the "Smart Ship").[28] The Navy also has a great deal of opportunity to reduce infrastructure, since cuts in infrastructure have badly lagged cuts in ships. Further, there is no enduring reason why Naval environment-shaping missions have to be organized around CVBGs. Perhaps what is needed is the concept of a "capable contingency group," which might involve Aegis cruisers and a variety of ships loaded with missiles (e.g., the arsenal ship). This would provide air and missile defense, surveillance, and substantial (but not very sustainable) offensive punch. The Air Force is coming to depend increasingly on its reserve-component elements, even for combat missions; is operating composite wings; and is reviewing how many air-superiority squadrons must be in high-readiness status in an era of diminished threats. It may wish to consider more permanent stationing of forces overseas, which could reduce squadron requirements.

For a variety of reasons, then, we believe that peacetime and less-than-worst-case contingencies could in the future be handled by a force structure with smaller active end strength. On the other hand, a substantial reserve component is desirable for other cases, and we do not believe that technology will soon substitute for infantry density in many operational situations associated with bad cases. Thus, we see value in high-quality reserve-component ground forces.

Reengineering to Avoid a Strategic Blunder

There is yet another reason for reengineering the force to reduce active end strength, while actually increasing capability. If the United

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[27]The draft version of this chapter had an erroneous depiction of this force, listing the active divisions with only partial fill under reserve forces, giving the impression that we suggested much larger cuts than we intended. Roughly speaking, we believe that the number of reengineered active brigades should be equal to the number of current active brigades, budget permitting.

[28]For discussion of Navy and Marine futures, see NRC (1996). For discussion of Air Force futures see the "Vista report" (Air Force Scientific Advisory Board, 1995).

States fails to do so, and if budget cuts come from "exogenous reasons" (decisions by Congress about relative priorities), U.S. combat forces will be savaged. The potential for hollow forces is real and sobering to those of us who doubt that enough money will be found in infrastructure to solve all the DoD's problems. As noted earlier, without reengineering, we should anticipate losing 20 percent of U.S. combat units for every 10 percent of the budget cut.[29]

If combat forces are reduced because of a failure to reengineer, it would be a victory for stasis. Organizations routinely argue that if budgets are cut, they must reduce what they are responsible for accomplishing. In defense, this would be manifested as disengagement: as rationalizing the ability to promote our interests while having nearly all of our forces at home, supposedly ready for rapid force projection as needed. In our view, this outcome would be disastrous for environment shaping and would, in time, lead to strategic vacuums, instabilities, and wars.[30]

Uncertainties and Worries: Reengineering Is No Panacea

Reengineering, of course, involves risks and uncertainty. A crucial assumption behind much current thinking is that the United States will be able to rely for warfighting on information dominance and long-range precision strike from aircraft, ships, and extended-range MLRS in the hands of Army units. The potential lethality of such forces is awesome, and field tests have been quite successful by and large. Furthermore, the empirical results from Desert Storm indicate that these capabilities are real. Indeed, even "old" weapons, such as the Maverick air-to-ground missile, raised the armor-killing capability of aircraft enormously. A relatively small number of aircraft (notably the F-15Es and others loaded with laser-guided bombs and Mavericks) achieved the vast majority of kills, approximating prewar estimates of effectiveness. The potential capability of sensor-fuzed weapons from aircraft and of Brilliant Anti-Tank munitions on the Army Tactical Missile System, whether launched by Army units or

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[29]See Lewis (1994). Recent unpublished data on Navy forces reinforces the point: Cutting "overhead" is very difficult, and the payback may be a decade after one begins closing bases.

[30]See also Chapter One in Khalilzad (1996).

from ships, is very high.[31] Indeed, even the very small number of B-2s in the inventory could, in principle, be given a massive armor-killing capability. As mentioned earlier, the day of the classic armored invasion with lengthy exposure of armored forces from attack could be over, except when it can be accomplished without U.S. opposition or in other special ways.

Unfortunately for the optimists, but fortunately for analysts, developments continue, and there are predictable cycles of action and reaction. Although we are enthusiasts for the new warfighting concepts, including the exploitation of long-range precision strike, such capabilities are not panaceas. The most obvious drawback is that these weapons currently have only marginal value for wars in unfavorable terrain or in circumstances where enemies are intermixed with numerous friendly civilians. There may be other potential problems as well. We note that there has been very little discussion about prospects for tactical countermeasures to our precision-guided munitions. RAND analysis indicates that large effects are possible under some circumstances without invoking exotic technologies or information warfare (see also Chapter Six). Further, it remains to be seen whether the United States will be able to implement its emerging concepts, such as operational maneuver from the sea. There are many challenges involving advanced mines available on the world market at low prices, shoulder-fired surface-to-air missiles that cannot easily be suppressed, and the potential for base-access problems at critical points in crisis. Complacency would be unwarranted.

Seeking Strategic Adaptiveness

It is likely that the United States will have to consider and reconsider both force sizing and the detailed character of the units over the next two decades. If, for example, the United States sees the emergence of adversaries likely to use massive infantry attacks, then, depending on its allies, the United States might have to increase the size of its ground forces and halt the trend seen by visionaries toward small, dispersed high-tech units. If the United States finds itself coming

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[31]For an unclassified summary of potential performance, see Sovereign (1996).

from behind and having to retake a large territory in which enemy forces were well established in rough terrain or urban sprawl, it might again find it necessary to have larger active ground forces.

Very different futures are also possible. It may be that our current formations (e.g., CVBGs) will be seen as excessively expensive and inappropriate for most missions, including being able to attack an invading army. It may be that the Revolution in Military Affairs enthusiasts will prove right and that change will be rapid and drastic.

The relationship of these prospects to the force-sizing debate is simple: We should not imagine that the issue of force size can be resolved now once and for all. The size of the force can increase and decrease over time in response to needs. This has happened many times in the past, even during the Cold War, and it will happen again. If we anticipate this, we may choose in our force sizing to emphasize protecting the "breeding stock" appropriate for generating diverse kinds of forces, most importantly including those we associate with next-generation warfare in the information era. This judgment suggests that active end strength should be sacrificed for modernization and experimentation with new kinds of units. The measure of a Service's vitality should not be active end strength but capability for both near-term missions and for adaptation to the worlds that may emerge in the middle and long terms. At the same time, it may be wise to hedge against needing larger numbers of traditional, manpower-intensive units by maintaining substantial capabilities in the reserves, at least until the future of warfare is clearer than it is today.

CONCLUSIONS

Our principal conclusion is that the United States should adopt a *set* of *three* force-sizing standards, to reduce pressure on the two-MRC criterion and to elevate the visibility of important considerations, such as environment shaping. If this step is taken, our estimates suggest that the current force structure is approximately valid in terms of numbers of combat units, although arguably smaller than it should be with respect to naval forces. We see little basis for cutting back the active component posture, and we are concerned that doing so will result in the perception of "disengagement," which would be damaging for environment shaping. This said, the force structure should be reengineered for the next era of warfare, and it is likely that

substantial reductions in end strength will be possible while actually increasing military capability for most missions. The exceptions are important, but should be dealt with by relying upon reserve-component forces and the ability to expand ground forces by enlistment if necessary.

The 1997 Quadrennial Defense Review can accomplish a great deal if it changes the criteria for sizing the force and adopts an overall strategic framework that elevates the stature of investments for a *diversity* of contingencies and for both environment shaping and strategic adaptiveness. Whatever is decided in 1997 about force size, however, we must expect that the matter will and should be reassessed regularly as the strategic landscape changes and as we learn more about the actual capabilities and limitations of the new types of forces emerging in the information era. A decade from now, it is unlikely that we will be talking in terms of divisions, wings, CVBGs, and MEFs as the currency in which to measure structure. Even if we do, the units by these names will probably look very different from what they do today. Or, at least, they *should* look very different from what they do today.

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CAPABILITIES FOR MAJOR REGIONAL CONFLICTS

Paul K. Davis, Richard Hillestad, and Natalie Crawford

INTRODUCTION

Purpose

This chapter describes highlights of recent analytical work assessing the prospective capabilities of various types of U.S. force structure (circa 2005–2015) to conduct and win major regional conflicts (MRCs). The work examines future versions of the force structure defined by the Bottom-Up Review (Aspin, 1993) and variants with a wide variety of postulated new features. Our emphasis is exploratory; that is, the analysis attempts to extract broad insights that can be used to construct alternative force postures for subsequent in-depth evaluation.[1]

This search for insights is appropriate because, since 1993, there have been many claims and counterclaims regarding U.S. capabilities in future theater conflicts. Our goals here are to clarify the issues, summarize insights, indicate where military problems are most and least serious with respect to MRCs, and suggest possible directions for program changes to mitigate the difficulties. Readers hoping to find a simple statement supporting or rejecting the claim that the United States can fight and win two concurrent MRCs will be disappointed because U.S. capabilities in this regard depend to a

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[1]The work described here was accomplished in separate projects, one for the Office of the Secretary of Defense and the Joint Staff, and one for the United States Air Force.

great degree on details of scenario, strategy, and even measures of effectiveness.

Approach

Our approach is as follows: First, we lay out a relatively generic campaign structure in terms of its major events and phases. Next, we discuss the analytic methodology, which varies with campaign phase. Then we discuss results from a very large set of simulations conducted in 1995 and 1996. After that, we provide reductionist explanations independent of simulation details. Finally, we review shortfalls in U.S. military capabilities that emerged from our analysis, and suggest corrective measures that those building the defense program might consider. Our emphasis is on "Achilles' heel" problems, which are more severe than any shortcomings of overall force structure, and on identifying high-leverage opportunities. We end with summary conclusions about how to discuss the subject of "MRC capability."

A CAMPAIGN STRUCTURE FOR ANALYSIS

Campaigns, Phases, and Operations

One of the difficulties in characterizing military capabilities is that war comes in many forms. Advocates of one or another point of view can talk past each other by having different implicit conceptions of what a future war would be like. To avoid this difficulty, it is useful to be more explicit by adopting a generic campaign structure.

This chapter considers the class of MRCs that can be characterized as in Figure 6.1 (see also Frostic and Bowie, 1994). As this figure suggests, a given MRC can be characterized by charting key events along a time line, i.e., when there is strong strategic warning of attack (W); when preliminary preparatory and deployment measures begin (e.g., movement to the crisis region of carrier battle groups [CVBGs] and perhaps maritime prepositioning ships) (C_1); when full-scale U.S. deployment commences (C); when combat begins (D); when the enemy's attack is halted (T_h); when the counteroffensive begins (T_{co}) and ends (T_v); and, finally, when the entire contingency is over and forces can come home (E). The figure also shows that a second MRC

Theater A

W C₁ C   D   Tₕ   T_co   T_v   E

Halt phase   Build up   Counter-   Consolidate
and pound   attack   phase
phase   phase

Theater B

W C₁ C   D   Tₕ   T_co   T_v   E

W:	Substantial strategic warning
C_1:	Initial preparations and deployments
C_s	Full-scale deployment
D	Combat begins
T_h	Enemy invasion is halted
T_{co}	Counteroffensive begins
T_v	Victory achieved
E	End of contingency (U.S. forces can leave)
D_b–D_a	"Delta" (in time) between the two theaters' D-Days

Figure 6.1—Schematic Time Line for Two MRCs

would have its own time line, with the D-Days of the two separated in time by days or weeks. There is no necessary relationship between events along the two time lines. For example, the halt phase in Theater A might take twice as long as the halt phase in Theater B.

Figure 6.1 is a considerable simplification. There is no guarantee, for example, that D-Day comes after C-Day (indeed, in 1990, U.S. deployments began about a week *after* Iraq invaded Kuwait). However, Figure 6.1 is representative of what people usually have in mind when discussing two-MRC challenges. Later, we discuss some of the important complications that arise when one deviates from this standard picture.

The Classic Problem: Halting an Invading Army

Within this depiction, the central problem is usually considered to be halting the invading army quickly enough—before unacceptable losses of life and territory occur. This is not particularly abstract when one considers specific theaters. In the old days of the Cold

War, NATO was resolute in planning to halt any invasion of West Germany near the border. Similarly, combined forces in South Korea plan to stop any invasion within a short distance of the border to avoid occupation of Seoul. Other theaters have more depth, but how much depends on perspective and strategy. If the objective in Southwest Asia is to defend Kuwait, one does not want to allow Kuwait City to be overrun. By contrast, if the objective is to defend Saudi Arabia, Kuwait can be considered "depth." Prior to the 1990 invasion of Kuwait, the latter interpretation was common among military planners because there was no commitment to defend Kuwait and, it was believed, little chance of success. The United States now maintains some forces in Kuwait much of the time and has prepositioned equipment for the use of rapidly deployable ground forces.

The "halt phase" of a campaign might last days or weeks. In the usual image, the enemy is halted by joint and combined operations that include ground forces and air forces in particular. There has been relatively little discussion of the naval campaign in the public literature, but the Navy might play a major role in securing sea lines of communication, establishing air and missile defenses, preventing the insertion by sea of special operations forces, and threatening the enemy's flanks and rear with Marines in "operational maneuver from the sea." If the Navy had a CVBG or two in the region by D-Day and especially if other deployments had been delayed because regional states denied access or warning was too ambiguous to justify a full deployment early, Navy operations would be critical in the early stages of the campaign.

Other Phases

Assuming success in a halt phase, the next mission—perhaps preceded by what some call a prolonged "build-up and pound phase"— is to restore the border and, quite possibly, to continue as necessary to defeat the aggressor's army thoroughly, even if that means going into his homeland. Finally, assuming victory in the overall war, one must anticipate a consolidation and stabilization phase that would include occupation.

EXPLORATORY ANALYSIS FOR MRCs

Dimensions of Uncertainty

Given this generic structure of two nearly simultaneous MRCs, the next task in analysis is setting up the conditions for simulated war. The results of simulated war depend on a large number of factors, all of them highly uncertain and resistant to anything like a best-estimate characterization. For example, how can one meaningfully establish a "best estimate" of the time between C-Day and D-Day for an abstract war 5 to 15 years in the future?

Even more troublesome is the delay between "warning" and deployment of U.S. forces. Warning is usually ambiguous, and there can be high political and economic costs associated with reacting, much less overreacting, to warning. After all, the enemy need not proceed with the attack, in which case the reaction can be seen as having been alarmist and disruptive.

These, however, are only a few of the many uncertainties. In our approach, we categorize uncertainties as falling into six categories:[2]

- *Political-military context* (e.g., timelines, allies, access rights)

- *Strategies* (the enemy's attack strategy and the friendly side's defensive strategy, which are functions of military objectives)

- *Forces* (size and general character of all relevant forces)

- *Capabilities of forces and weapons* (not only the nominal effectiveness of the various divisions, wings, and battle groups, down to the level of particular weapons, but also their real-world in-war capabilities, which might prove quite different)

- *Environmental factors* (e.g., weather and the particular terrain on which battle is joined)

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[2]This draws on work developed over a decade, early portions of which were associated with development of the RAND Strategy Assessment System (the predecessor to the JICM model) and "multiscenario analysis" of Central Region and global-warfare issues. See Davis (1994), Chapter 4, for a summary. Similar ideas about scenario-space analysis have been proposed independently by Bonder and Cherry (Bonder, 1994) and applied to challenges of the post–Cold War problems of the Supreme Allied Commander, Europe.

- *Algorithms and related parameters for describing military operations* (e.g., the equations and parameter values used to estimate attrition rates and movement rates).

The beginning of wisdom in contingency analysis is recognizing that these uncertainties exist and are large. Some are controllable (e.g., the size of our own forces), but others are not. We cannot reasonably adopt some kind of worst-case analysis, because such cases are neither a credible nor a useful basis for force planning. There are no natural break points. The issue becomes deciding how much "scenario space" we want U.S. forces to cover. How much insurance is enough?

Context of Analysis

As computer power has improved, we and other RAND colleagues have sought to confront massive uncertainty directly by examining a much broader range of the potential scenario space than has heretofore been feasible. Nonetheless, many assumptions are necessary to contain the scope of analysis. The work described here takes the perspective of force-planning studies. That is, it focuses on relatively "macro" factors, such as force size, time lines, strategies, and the presence of high-leverage new capabilities—rather than other, more specific, factors that would be important to a particular commander worried about war tomorrow in his theater.

Experimental Design

Our experimental designs for analysis varied a great deal with the future adversaries and theaters considered, but Table 6.1 illustrates variables addressed, especially in work concerned with Southwest Asia and South Korea. We also considered other theaters, both specific and generic. However, considering a wide variety of operational circumstances for the "standard" name-level scenarios of Iraq versus Kuwait and North Korea versus South Korea provides a rich set of tests with which to assess U.S. MRC capabilities.

Indeed, the principal problem with more-usual MRC analyses is not the focus on one or two potential aggressors but the failure to examine diverse operational circumstances that would stress U.S. capabilities in different ways.

Table 6.1

Illustrative Experimental Design

	Factors Varied in Analysis (partial list)	Illustrative Values (partial list)
Political-Military Context	Deployment time: C-Day relative to D-Day	D–10 to D+10
	Time period ("delta") between theaters: D_b-D_a	0 to 30 days
Military Objectives, Strategies, and Constraints	Attack objectives, strategies, and constraints	Objectives, type invasion, main thrusts and concept of maneuver largely held constant[a]
		Variants involving chemical weapon attacks[b]
		Variants involving unconventional threats to ports and airfields, and mining of straits[c]
	Defensive objectives, strategies, and constraints	Variants representing different objectives, priorities, and constraints
Forces	Ground-force levels	4 to 16 (equivalent divisions)
	Numerous new capabilities (see Table 6.2)	(see Table 6.2)
	Information-dominance capabilities	Levels 0, 1, 2, and 3
		Characterized indirectly by delay times in recognizing and countering, concentrating against main-thrust attacks, and in tactical-level effectiveness of TACAIR and ground forces
Force and Weapon Effectiveness	Enemy and allied ground-force effectiveness multipliers	0.5 to 1[d]
	U.S. fixed-wing and attack-helicopter effectiveness (kills per sortie)	0.5 to 3[e]
	Sortie-rate suppression (relative to baseline sortie rates)	0 to 80%[f]
Environment	Weather	Treated indirectly[g]

Table 6.1—continued

	Factors Varied in Analysis (partial list)	Illustrative Values (partial list)
Algorithms	Slowing-effectiveness of TACAIR	Nominal and minimal (assumes ground forces "keep on trucking" at nominal speeds until severely drawn down by attrition)[h]
	Break points for ground forces (percent attrition at which a unit is pulled out of battle)	30 and 50%

[a]An important feature of the modeling was rule-based "adaptive strategies" to meet the needs encountered in the particular run. For example, the U.S. forces associated with the POMCUS brigade in Kuwait might marry up with its equipment and fight in northern Kuwait, marry up with the equipment and fall back to fight later, or not be deployed at all (sacrificing the equipment), depending on how the war develops.

[b]Chemical effects were reflected largely through airfield and port availability and sortie rates.

[c]These were reflected by requiring initial deployments of infantry forces and counter-mine forces, thereby delaying deployment of main forces for halting the invasion.

[d]A given combat unit may be much less effective than feasible given its equipment and manning, as the result of such diverse issues as training, doctrine, morale, poor leadership, and commitment to the war.

[e]These were inputs for ideal circumstances (e.g., an F-15E attacking a moving road formation). Simulation outputs for kills per sortie were typically less, by as much as a factor of two, because of variations in the type of battle, corrections for redundant attacks on the same vehicles, and other factors.

[f]Sortie-rate suppression could be due to many factors, ranging from chemical attacks on forward air fields to greater-than-expected surface-to-air-missile threats delaying suppression of air defenses and reducing the rate at which air-to-ground sorties could be safely flown.

[g]Bad weather was manifested through reductions on both kills per sortie and sorties per day.

[h]In baseline calculations, the maximum speed of an armored force is limited when it is under air attack, even if attrition has not yet reached high levels. This simulates indirect effects of confusion and attacks on support systems. However, this slowing effect is controversial within the modeling community, so we ran cases that turned the effect off, allowing the units to "keep on trucking" until substantially destroyed.

We considered nominal force structures for a period between 2000 and 2015. In addition, in one or both of the two studies underlying this chapter, we considered cases representing a wide variety of additional capabilities, as suggested in Table 6.2. In some cases, the

Table 6.2

Capability Enhancements Considered

Lift and Prepositioning	More POMCUS (including long-range fire capabilities)
	More airlift
	More sealift
	Ground-effect aircraft
Sortie-Rate Enhancements	Increased crew ratio
	Improved reliability
	Additional spare engines
	Regional maintenance
	All-weather capability (F-16C)
Air-to-Ground Munitions and Sortie Effectiveness	Low-cost anti-armor munitions
	Small smart bombs
	Additional standoff munitions
	Larger PGM loads per sortie
SEAD and Unconventional Capabilities	High-power microwave
	"Information weapons"
Ground-Force Enhancements	Reduced lift footprint
	Increased numbers of ATACMS
	EFOGM
	Reconnaissance cavalry regiments with long-range fires
Naval-Force Enhancements	Better air-to-ground munitions
	Arsenal ships
	Faster deployment
	Increased number of TLAMs
Increased Number of Air Platforms	By type of aircraft (e.g., B-2s with sensor fuzed weapons)
Other	Air base defense against SOF
	Theater missile defense capability
	Space battle management and C^4/ISR
	Precision targeting
	Information dominance

extra capabilities were represented explicitly (e.g., additional B-2s or C-17s). In other cases, they were represented indirectly through changes in parameter values (e.g., increasing crew ratios would increase the sortie rates of aircraft). In still other cases, they were represented by a combination of force-employment strategy and parameter values. For example, one of the most important payoffs from a moderately high level of information dominance was assumed to be the ability to recognize quickly where the attacker's main thrusts were and to inform our ally's ground forces quickly so

that both those ground forces and U.S. air forces and long-range fires could be appropriately counterconcentrated. We considered this to be a relatively straightforward and feasible way to use technology as leverage in improving the effectiveness of allied forces on the ground.

Although we examined a wide range of potential capability enhancements, many of them were motivated by what we considered to be generic challenges: (1) enhancing and complementing capabilities of allies; (2) getting forces to the theater quickly; (3) dealing with access problems, including those due to mines; (4) establishing secure lodgments quickly; (5) suppressing air defenses quickly to allow high-intensity interdiction attacks; (6) minimizing casualties; (7) defeating—not merely attempting to deter—WMD (especially chemical weapons) delivered by missiles; (8) fighting in difficult terrain; and (9) conducting counteroffensives. Our initial hypothesis was that all of these were nontrivial challenges. Subsequent analysis strongly confirmed this.

Varying Objectives, Strategies, and Measures of Effectiveness

Table 6.3 indicates some of the many changes in objectives, strategies, and measures of effectiveness considered. This reinforces the earlier point made that these variables matter greatly in assessing capabilities and the relative merit of different improvement measures. One example is that a constraint to minimize attrition to manned air forces increases the perceived value of stealth systems, missiles, and, in the longer run, armed unmanned aerial vehicles (UAVs).

A related issue in setting up the experimental design is recognizing that there are at least three distinct purposes to consider when examining alternative investments:

- Doing the same warfighting job using fewer of the available forces, thereby increasing strategic flexibility, reducing casualties (e.g., by having fewer manned sorties, but achieving more kills per sortie), and perhaps reducing costs

Table 6.3

Illustrative Variations of Operational Choices, Objectives, and Constraints

Operational Concepts	Counterattack when force ratio is sufficient
	Counterattack when heavy U.S. ground forces arrive
	Conduct lengthy air-attack phase before counteroffensive
	Allocate air forces preferentially to ___ (missions)
Warfighting Objectives	Stop offensive early
	Restore border only
	Counterattack to enemy capital
	Accomplish ___ with strategic bombing
	Destroy ___% of enemy forces
Constraints	On attrition to U.S. air forces
	On attrition to U.S. ground forces
	On allied air and ground attrition
	On regional access for U.S. air, ground, and naval forces

- Doing the same warfighting job nominally, but increasing the certainty of success—i.e., *hedging* against the effects of unexpectedly severe air defenses with new tactics, poorer-than-expected performance from allied forces, or operational constraints

- Improving warfighting outcomes (e.g., shortening the war and decreasing casualties).

Depending on which of these perspectives is taken, a candidate investment can look much better or worse. So also, one may change views about how best to use scarce resources. Many variations were explored, but Figure 6.2 indicates the geography for a typical invasion scenario involving Iraq attacking Kuwait and Saudi Arabia. Only the attacker's main thrust is highlighted.

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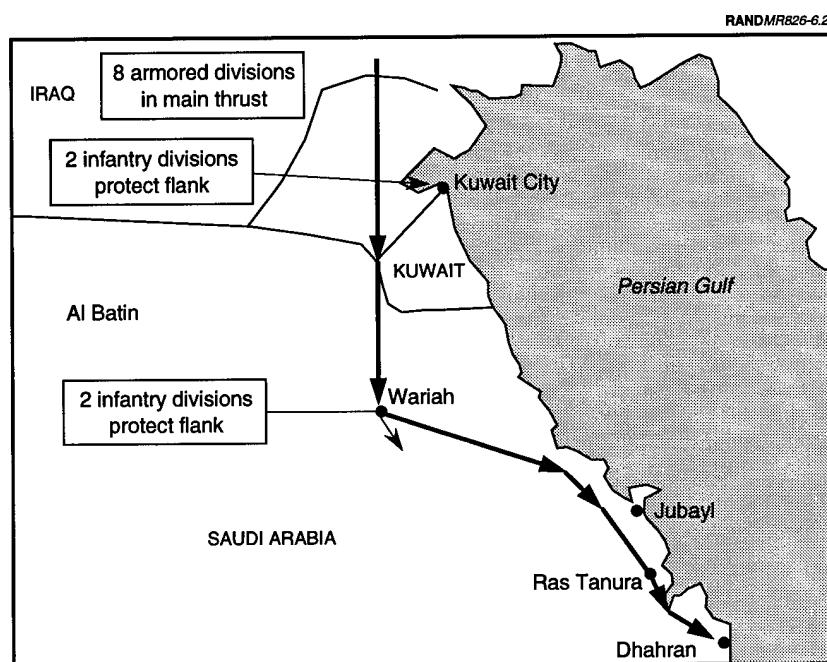
Figure 6.2—Illustrative Invasion Case for Southwest Asia

REPRESENTATIVE RESULTS FOR THE HALT PHASE

Results of Exploratory Analysis

The kinds of experimental design suggested in Tables 6.1 and 6.2 involve tens or hundreds of thousands of cases, even with shortcuts.[3] Much of the analysis is performed by "flying through the outcome space" after completing the computer simulations and storing the results (i.e., by moving slider bars on a computer display that varies

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[3]Some of the work was accomplished on networked Sun workstations using the JICM model. Other work was accomplished on a Macintosh computer using a more simplified spreadsheet campaign model (START). Our colleagues Carl Jones, Barry Wilson, and Jeff Hagan were responsible for much of this work. Bruce Bennett provided valuable advice.

the factors in Tables 6.1 and 6.2). What we show here are merely "slices" through that outcome space.[4]

Figure 6.3 shows results for baseline future forces (the result of a decade's buildup consistent with current programs) as a stoplight chart in which open squares represent favorable results (indicating a successful defense), black squares indicate very unfavorable results, and other shadings are intermediate. In normal work the display has colors ranging from red to green.

Whether a given simulation result was "successful" depends on the objectives established. Figure 6.3 assumes success (open squares) if the Iraqi invasion is halted before the Iraqis reach the Saudi border or, at least, before they reach the coast. In this case, outcomes appear favorable so long as there are at least four days of full-scale deployment prior to D-Day, even if the effectiveness of tactical air forces is lower than one might expect it to be in 10 to 15 years. (Even in Desert Storm, F-15Es approached one kill per sortie against moving armor,[5] and in examining future forces we can reasonably assume that "typical" U.S. air-to-ground aircraft will have at least comparable effectiveness[6]). Some analysts argue for baseline estimates higher than our top figure of 2 kills per sortie because of sensor-fused weapons and increased weapon loads, but we believe it likely that command-and-control problems, such as countermea-

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[4]In 1991, the technology for this type of exploratory analysis was developed by our colleagues Steven Bankes and James Gillogly.

[5]The overall effectiveness of anti-armor sorties was quite low, perhaps 0.2 or so. However, most such sorties were flown by F-16s dropping dumb bombs from relatively high altitudes to avoid air defenses. By contrast, the bulk of vehicle kills were achieved by A-10s, F-15Es, and F-111s carrying precision-guided munitions (PGMs). Most of the PGMs, moreover, were used against stationary dug-in targets, rather than moving targets, which are easier to kill. It is reasonable to assume that by the period of interest (roughly 2005–2015), both Air Force and Navy aircraft will be predominantly precision-weapon capable. Some will also have sensor-fuzed weapons, which can be more lethal than earlier PGMs. For discussion see Bowie et al. (1993).

[6]Clear and differentiated data on air-to-ground effectiveness in the Gulf War do not seem to exist in the unclassified literature. See Frostic (1994) for a short description of how the various aircraft operated and the effects the pilots reported (including those of F-15Es and those F-16s with LANTIRN pods). See Keaney and Cohen (1993) for the official history. One interesting point Frostic made is that, where hard data exist, the weapon systems performed much as peacetime testing predicted.

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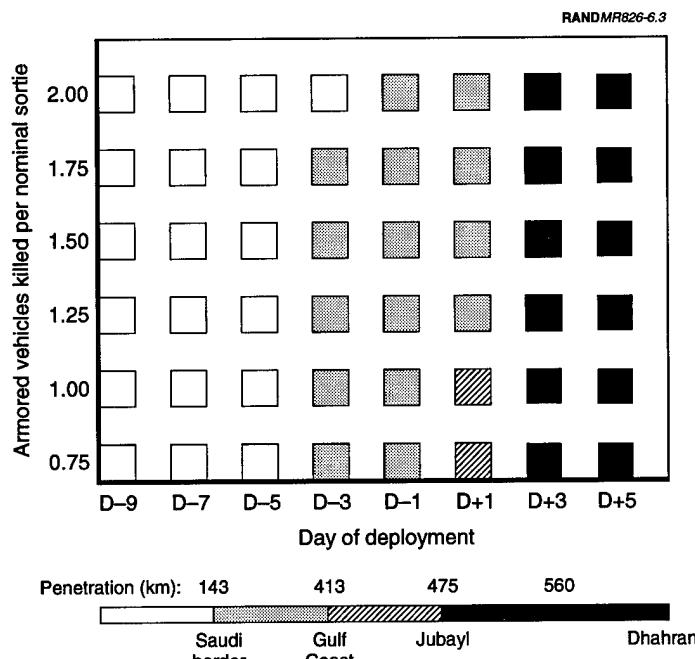
Figure 6.3—Illustrative Results for Defense of Saudi Arabia (circa 2010)
(shading of each cell indicates quality of one simulation's outcome)

sures and imperfect allocation and vectoring of sorties as the result
of less than fully predictable ground movements, will limit average
performance. In any case, the exploratory analysis examined a range
of values from about 0.5 kills per sortie up to 3.

Merely to illustrate the kinds of operational assumptions that under-
lie such simulations, let us quote from a portion of our informal doc-
umentation:

> Our initial analyses assumed the goal of halting the advance as far
> north as possible. Kuwaiti armored/mechanized units, roughly the
> equivalent of two Saudi heavy brigades, defended in northern
> Kuwait, between Al Jahra and the Iraqi border. Of the five Saudi
> armor/mech brigades assumed available in the eastern region, four

moved to defend along the route from Wariah to the Kuwaiti border, while the remaining brigade defended the Dhahran area. In addition, infantry units defended Kuwait City, Wariah, and Dhahran.

U.S. forces joined this defense as far forward as circumstances permitted (the war plan used in the simulation was adaptive). The amount of warning time was a key factor. If U.S. mobilization and deployment began early enough, the United States deployed forces to man the POMCUS heavy brigade set in southern Kuwait, which then joined the Kuwaiti defenders. However, if the U.S. deployment was late, offloading here was likely to be too dangerous, due to the threat of Iraqi ground advances, or possibly air attacks. In this case, the Kuwait POMCUS set was abandoned. As explained above, the hypothetical U.S. "Sea Cavalry" included a carrier-based attack helicopter regiment (e.g., 54 AH-64 helicopters or a comparable component of Comanches). These units, if available, deployed to wherever they could do the most damage to the Iraqi advance.

Other U.S. early entry ground forces initially deployed to the Dhahran region and advanced from there to join the GCC defending forces. This always included two heavy brigades: one to man a POMCUS set in Qatar and another in the northern United Arab Emirates. A U.S. Army Pre-positioning Afloat (APA) heavy brigade, if available for this contingency (which it was except in cases in which we assumed a prior contingency elsewhere), also deployed to Dhahran. These forces were supplemented by airlifted U.S. light forces, which either supported the advance against the Iraqis or, in the case of opposition elements in Saudi Arabia, supported Saudi government forces and secured air bases, ports, and other key facilities.

Again, our point here is merely to indicate that campaign analysis requires describing strategies and adaptations in some detail.

While the baseline results (Figure 6.3) were favorable, the results were much less good if the objective was to halt the imagined Iraqi advance close to the Iraq-Kuwait border—i.e., to prevent the overrun of Kuwait itself. Figure 6.4 indicates that the Iraqi advance could be stopped within roughly 60 km of the Iraq-Kuwait border if the United States had a week before D-Day to deploy. For a deployment time of
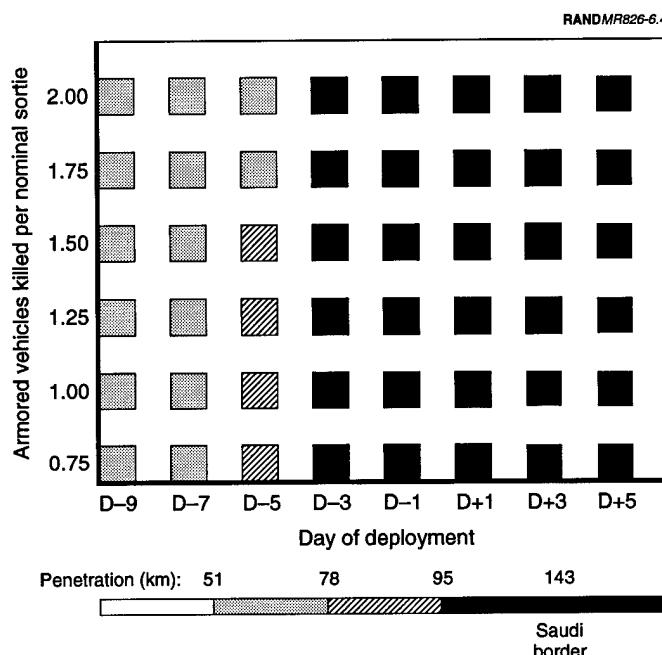
Figure 6.4—Prospects for Defense of Kuwait with Baseline
Forces (circa 2010)

about four days, results vary with the deployment rate and effectiveness assumed for air forces (both Air Force and Navy).[7]

The exploratory analysis examined a broad range of parameter values. To show more of this dimensionality, Figure 6.5 adds a third dimension to the display and reverts to using defense of Saudi Arabia as the measure of effectiveness. The z axis, going into the page, represents the percentage of suppression of Air Force tactical sorties (we

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[7]Our baseline assumes more rapid deployment of Air Force fighter wings than in Desert Shield (for which the average was about one squadron every other day, according to Kassing, 1992, p. 24). Although the fast deployments should be feasible in the future, especially with appropriate prepositioning, many problems can arise and results should not be taken for granted. This is the kind of crucial issue on which there can be substantial differences between what force planners expect and what is in fact achieved. As noted in the Kassing paper, there were many troubling discrepancies between planning factors and the performance of U.S. strategic lift.

RANDMR826-6.5

NOTE: 0, 20, 40, 60, 80 percent going along z-axis, into paper.
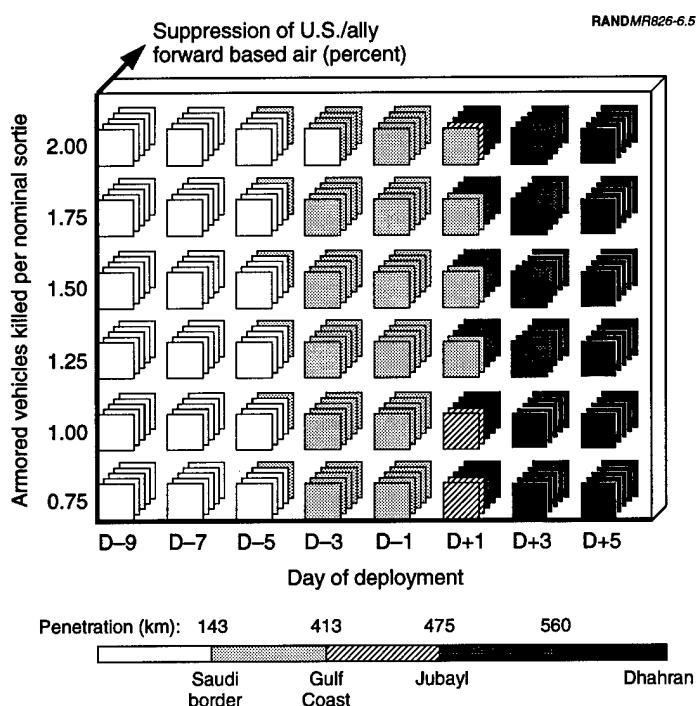
Figure 6.5—Defense of Saudi Arabia (circa 2010), Considering
Effects of Sortie Suppression

assumed that naval air forces would be unaffected by, e.g., chemical
attacks on bases). Rather surprisingly, the results are not substan-
tially worse than those in Figure 6.3. Upon examination, we found
that this was due to a combination of naval air forces (assumed in
our work to be far more effective than in the Gulf War, as the result of
being equipped with sensors and munitions comparable to Air Force
systems), long-range bombers, the lethality of prepositioned ground
forces and Marine forces, and the considerable depth for defense.
Results were much less good, of course, when we used defense of
Kuwait as the measure of effectiveness and looked at deployment
times prior to D-Day of less than a week or so.

Figure 6.6 illustrates another way in which results can be less posi-
tive. It assumes both an Iraqi strategy and overall political-military
context creating the need for forced entry. More specifically, we
assumed that the airfields and ports were sufficiently insecure as to
require forced entry by infantry prior to the arrival of tactical air
forces and personnel marrying up with prepositioned ground
equipment. This might come about through an Iraqi-inspired insur-
gency within Saudi Arabia. Even if spotty and ultimately controllable
by the Saudi government, such disruptions could cause major
deployment problems. We also assumed mines in the Strait of
Hormuz that could be cleared after a delay time of a week. The
assumptions regarding ability to secure airfields and ports quickly
and to clear mines were arguably optimistic. Thus, problems are
likely even more serious than indicated.[8]

Here, results have shifted suddenly from quite favorable to quite
troublesome. We consider the potential need for forced entry and
mine clearing to be an Achilles' heel for baseline forces. Note that
adding or retiring, say, 10 percent of our total force structure would
not affect this Achilles' heel: The problem is more specific, related to
forces and specialized capabilities available within hours or days.

Again, then, we conducted an extensive set of analyses examining a
broad range of assumptions. These included not only assumptions
within a given theater but also assumptions about the time between
the outbreak of conflict in two theaters, which war started first, how
airlift was allocated among types of forces and between the two the-
aters, and so on. Some of the details are classified, but the broad
conclusions can be understood in simple terms. And while the
underlying simulation is sophisticated in many respects, the particu-
lar results of interest in the current analysis depended primarily on
some very simple assumptions. Although intended as a screening
analysis to identify key factors and hypotheses for subsequent study,
the exploratory analysis yielded insights (not precise numbers) that
we believe have a relatively firm foundation.

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[8]The feasibility of prompt seizure operations would depend on good use of warning,
even prior to "C-Day." The 82nd airborne, afloat Marines in the region, and Rangers
would all be candidate units. Prompt mine clearing would depend on early deploy-
ment of specialized helicopters from the continental United States.
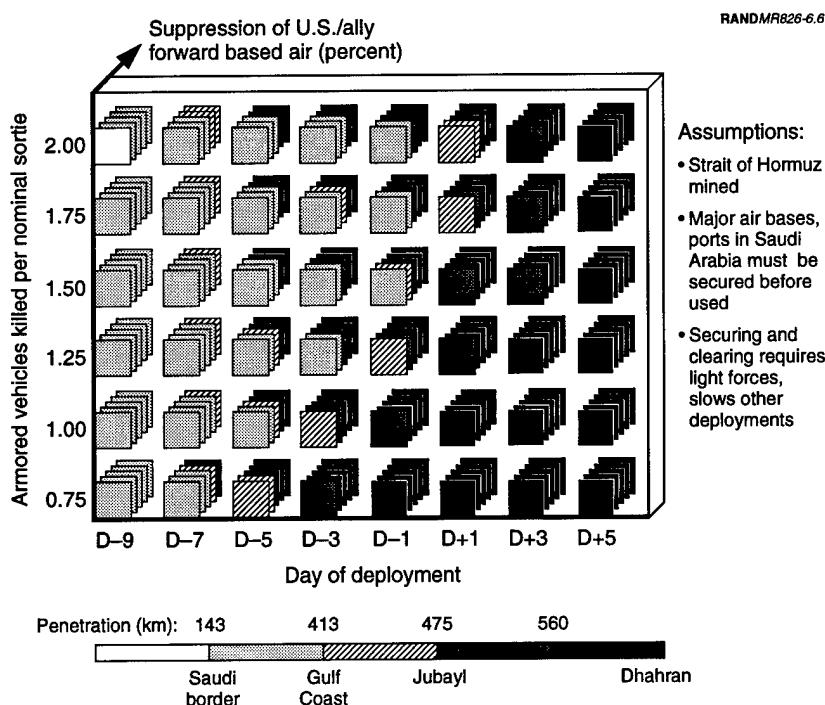
Figure 6.6—Defense of Saudi Arabia (circa 2010), with Entry and
Access Problems

Understanding the Results in Simple Terms

Good Cases. In "good cases," which correspond to the enemy pursu-
ing a straightforward armored invasion and the United States having
enough deployment time to put air forces into the region and to
deploy Army forces to their prepositioned equipment before it is
overrun, the "halt" problem consists of destroying enough armored
vehicles so that, even in a conservative analysis, one could be confi-
dent that the enemy forces would be stopped. Suppose that there
are approximately 1,000 armored vehicles in an "equivalent division"
(ED), which is perhaps 30 percent more than a current Iraqi division.
Suppose further that there are roughly eight such EDs in the main
attack. Next, suppose that the attack will stop if half of the armored

vehicles are destroyed. If each sortie killed an average of one vehicle, then a total of 4,000 sorties would be required. Assuming three sorties a day for the critical period (higher than sustainable), that would correspond to 1,333 aircraft-days, counting only air-to-ground aircraft with high capability. If there were an average of 200 such aircraft in the theater during the first week of war (mostly Air Force and Navy fixed-wing aircraft, but with some attack helicopters), which is a function of when deployment began, of course, then the invasion should be halted in a week. This ignores the attrition due to ground combat of maneuver units or to long-range missiles, such as ATACMS, that might be launched from Army units or Navy ships.

Mechanized army units can move at high speeds for short periods (e.g., 30 km/hour). However, they cannot move rapidly over long distances, especially when in the formations required under combat conditions. Tanks must be refueled; traffic jams occur; units stop and must be cajoled or threatened into continuing; command and control is usually confused; and even moderate resistance on the ground can compel the invader to proceed cautiously with relatively concentrated forces. That concentration increases the effectiveness of air forces. Historically, average movement rates of 20 km/day have been typical of *successful* offensives. Movement rates of 80 km/day or so are usually assumed impossible except in the absence of opposition (e.g., as when U.S. forces swept into Iraq in the famous left hook). Returning to the hypothetical example and assuming a movement rate of 20 km/day, the halt would occur within 140 km of the border. Roughly speaking, then, this explains the kinds of results seen in the above figures.

Now, the numbers in the above paragraph were purely illustrative. Other assumptions are equally plausible: higher or lower kills per sortie or daily sortie rates, smaller or larger Iraqi forces, or a smaller or larger number of aircraft available in the theater during the first week. The notion that half the armored force must be destroyed before the invasion halts is also open to debate, especially for attacking forces without intense motivation. Thus, the precise halt time can vary drastically with the specifics. Giving only "best estimate" results is quite misleading, because they are not obviously any better than substantially different ones. The overarching conclusion, however, is that air and missile power, in enough quantity, should be able to halt a classic invasion. Many observers have argued with this

conclusion. But it seems valid. As a point of reference, we quote a renowned German army general of World War II, when aircraft were not nearly so lethal:

> A large-scale offensive by massed armor has no chance of success against an enemy who enjoys supreme command of the air (von Mellenthin, 1955, Ch. 22).

Returning to what analysis can tell us, Figure 6.7 shows the sensitivities of the simple calculation. To use it, consider the top curve of the left-hand figure, at an x-axis value of 600. That corresponds closely to the example above. Looking across the range of cases in Figure 6.7, one can see why airpower (and missile power) should be potent against classic armored invasions in open terrain, especially with some defending ground forces and defensive depth, as is the case for defense of Saudi Arabia and Kuwait.[9] There is considerable room for
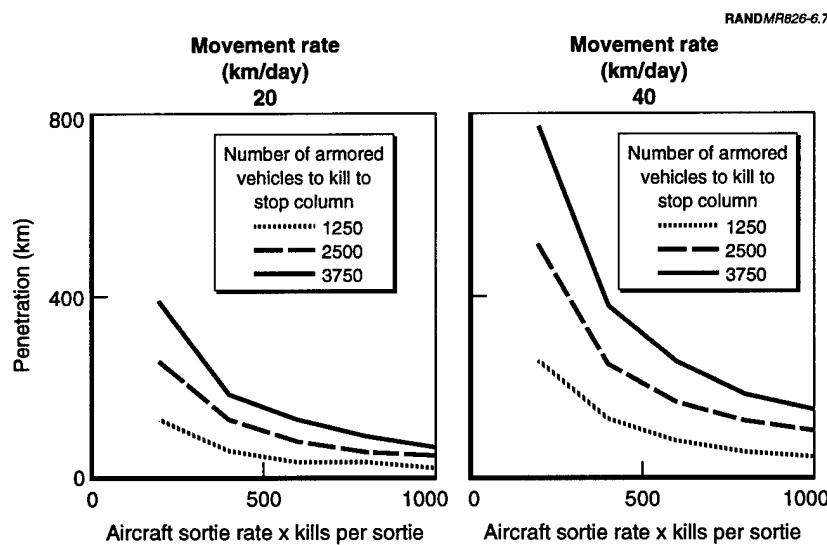
Figure 6.7—Penetration Versus Weight of Airpower (higher movement rates are possible if ground forces fail to slow invader)

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[9]See also Bowie et al. (1993), which was probably the first significant publication suggesting such impact.

error in many of the key assumptions, but there are ways to hedge. For example, if one is doubtful about kills per sortie, perhaps one can increase the number of attack aircraft in theater or sortie rates (via improved crew ratios or better logistics). It is important, however, that there be some ground forces present. Otherwise, the attacker could proceed in a highly dispersed "dash" that would increase movement rates beyond those shown and reduce the effectiveness of aircraft and missiles. And, of course, terrain matters enormously. Our calculations here are irrelevant to battle in jungles and urban sprawl.

The principal point is that this type of armored invasion would almost certainly fail against U.S. forces given time to deploy. Indeed, even the capabilities demonstrated by U.S. forces six years ago with older-generation precision munitions (Mavericks from F-15Es and A-10s) should "ruin the day" of an attacker trying to emulate classic invasions. This is not idle speculation, since there is considerable evidence from the Gulf War about how disruptive such attacks can be psychologically, perhaps even more than physically. Indeed, many of the Iraqi armored vehicles examined after the war had been abandoned without damage.[10]

Bad Cases. It is similarly easy to understand why results would be much worse in other, "bad" scenarios. Some of the worst involve WMD, discussed below, but there are bad cases even without WMD. Suppose that resistance at the key air bases and seaports required the U.S. commander to force entry with specialized Army and Marine infantry. As noted earlier, this might not even be possible without weeks of preparation, but even if it were, it would require dedicating airlift to the deployment of those forces, which would be of little use in halting the armored invasion. Thus, both ground forces and tactical air forces would arrive later, during which time the Iraqi advance might continue. Understanding this does not, as the cliché goes, require rocket science. For similar reasons, temporary closure of the Strait of Hormuz at the outset of such a conflict could be quite troublesome. So too would be political denial of base access.

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[10]For discussion of disruption see Keaney and Cohen (1993), Frostic (1994), and Chapter 7 of Pape (1996), which draws on several of the earlier studies that had been conducted independently.

Multitheater Issues. In two-MRC cases with a short period separating the conflicts, airlift would be divided between theaters. Even though Air Force tactical aircraft can have a profound effect on an invading armored force and can self-deploy, they cannot operate without a substantial support structure. Some of this may be prepositioned, but a good deal of support equipment and personnel must be airlifted in parallel with the deployment of the aircraft themselves. Thus, in the event of a two-theater war, if strategic-mobility assets had to be divided between the two theaters, everything would slow down—not just the deployment of ground forces, but even the deployment of air forces. The principal exception here would be Naval forces in or near the region by D-Day. Although Navy aircraft would be supported directly from CVBGs, these aircraft would probably not be numerous enough to carry the burden.[11]

Again, then, it is straightforward to understand approximately what is going on in the much more complicated computer simulations as one considers a variety of two-theater cases. Roughly speaking, if the period between the outbreak of war in the two theaters is at least three weeks (which allows the United States and its allies to halt the invader and gain the initiative in the first theater), then—in some cases—both wars can be serviced almost as well as if there were only one war.

To be sure, this result does not hold up if we assume that details of today's force structure are extrapolated into the future. Today (in 1997), there are many practical problems that would make simultaneous conflicts very difficult. In particular, unless mobilization were prompt, there would be severe shortages in critical support units because so many supporting forces and assets are in the reserve component. Also, it is questionable whether our decision-support and logistics systems would be adaptive enough to deal well with the situation (see discussion of the former in Kassing, 1992). It is not surprising that so many senior officers are skeptical today about two-MRC capability: They should be. These problems, however, are more a matter of management than the result of overall resource or force-structure limitations. In this information era, the U.S. military

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[11]See Birkler, Perin, et al. (forthcoming) for comparisons of Air Force and Navy effectiveness in tactical air missions.

should be able to greatly reduce such frictions in the system, especially if civilian authorities and Congress permit necessary changes in infrastructure, logistics, and tailoring of reserves.

Very Bad Cases. So far, we have only discussed problems associated with time line and the halt phase. There are many cases to be contemplated that could be even more problematic. Suppose, for example, that the U.S. response to ambiguous warning were slow enough so that the invasion was successful before U.S. forces could arrive in numbers (e.g., C-Day = D-Day + 6, to mention a case with recent precedent). In that case, the challenge would include a long-distance movement followed by a counteroffensive against dug-in enemy forces, which in some theaters might be distributed through urban sprawl rather than strung out in the desert. The enemy might deliberately intermingle with friendly civilians to deter preparing for the counteroffensive with massive bombing. In such a theater as Korea, the battle might be infantry intensive in rugged, mountainous terrain. Add to these complications the possibility that an enemy might use chemical, biological, or nuclear weapons against U.S. and allied forces or allied population centers. In all such cases, the United States might have its hands full to deal with even one MRC. And that MRC might take many months or, conceivably, years. Although we have done some simulations of "very bad cases," the most important points can be understood without bothering.

CONCLUSIONS FROM INITIAL EXPLORATORY ANALYSIS

With this overview as background, let us now summarize some of the more important insights derived from the simulation-based exploratory analysis. The observations that follow assume that U.S. forces are equipped with excellent command, control, communications, computers, intelligence, surveillance, and reconnaissance (C^4/ISR) assets, capabilities that will be a cornerstone of future U.S. forces (see, e.g., Johnson and Libicki, 1996; Shalikashvili, 1996).

Theater-by-Theater Observations

Southwest Asia. Because of the substantial prepositioning programs under way,

- Deterring or defeating a future invasion of Kuwait and Saudi Arabia by Iraq will probably be quite feasible in "standard" scenarios, which assume unopposed deployment operations and good use of warning (i.e., "leaning forward" with preliminary deployments and other preparations, well before "C Day").

- In other cases results could be much worse, especially for defense of Kuwait.

- Potential corrective measures include expanding stocks of high-quality anti-armor air-delivered munitions in theater, prepositioning or forward deploying ground- or sea-based long-range-fire systems, forward deploying attack helicopters on land or on carriers (a possible focus for Marines), or use of other forces, such as an enhanced force of long-range bombers with advanced weapons and avionics for prompt attacks on the advancing Iraqi army.[12]

East Asia. Assuming reasonable improvements and preparations over the next decade, by both the defended ally and the United States,

- South Korea should be capable of defending itself against a North Korean attack, although an attack with weapons of mass destruction might cause a great deal of chaos and trouble, and Seoul is extremely exposed. U.S. air forces provide a powerful hedge against various potential ground-force disasters, although weather can be a mitigating factor. Procuring and prepositioning sizable stocks of anti-armor and anti-personnel munitions that are effective in poor weather is warranted.

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[12]There has been much controversy about whether more B-2s should be procured. The assessed value of such additional B-2s depends on many factors, such as warning time, access problems of the sort described above, the fighting quality of allied ground forces, the air defense environment (which affects whether B-52s and B-1s can be used over hostile territory), munitions on the B-2s, their effectiveness when operated in a hostile air defense environment (B-2 radars could be used only intermittently, and B-2s may be visually detectable in the daytime by interceptors), the enemy's attack formation, and the ability of the formation to keep moving despite massive losses. Aside from our own analyses, see Bowie et al. (1993), Welch (1994), Buchan (1994), and O'Hanlon (1995, pp. 145–149). The principal factor favoring the B-2 is that—if properly equipped and able to deal with residual fighter aircraft in the day, with escorts or parallel missile strikes against air bases—it would provide a powerful hedge against plausible short-warning or delayed-access cases.

- A unified Korea should be able to mount a substantial deterrent against China, at least insofar as preventing a quick and easy invasion is concerned. This assumes that Korea would have a modern army, including long-range-fire systems comparable to the Multiple Launch Rocket System, (MLRS), the Army Tactical Missile System (ATACMS), and perhaps the Brilliant Anti-Tank (BAT) munition. Also, it assumes Korea would not insist on a forward defense of its border with China, but would instead exploit some of the mountainous terrain and depth. U.S. air forces would provide a substantial hedge. Thus, not only is there no current reason to see China as a threat to Korea, so also is there reason to believe that the military balance will be adequate.

East Central Europe

- Extending NATO's security guarantees to Poland should not create serious challenges—so long as Poland maintains a substantial military capability herself (a critical assumption with implications for negotiations during the NATO enlargement discussions). A NATO force of 5–10 projectable divisions, plus 8–10 effective Polish divisions, plus ten wings of tactical air forces, plus a contingent of MLRS, ATACMS, and BAT would be sufficient to defeat attack under a wide range of circumstances.

Near- and Middle-Term Capabilities Against Rogue Nations

Turning now to more generic conclusions, we should start by observing that the capabilities of U.S. general-purpose forces are very substantial. In straightforward engagements, U.S. forces will simply outclass any regional aggressor on the landscape. Indeed, our analysis of programmed future forces suggests that, with sufficient warning time and reasonably effective allies (big ifs, to be sure), the United States should be able to defeat a classic armored invasion handily. In many cases, the United States should be able to handle two such invasions concurrently—so long as they are some weeks apart or, in some cases, even if they are more nearly simultaneous.[13]

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[13]Some caveats: This statement assumes no ongoing lesser regional conflicts or peacekeeping operations that materially interfere, wise allocation of military resources

Thus, classic armored invasions affecting U.S. interests should be or should soon become obsolete. The United States will need to prepare for them indefinitely to keep them obsolete. But they may not occur again, at least not in pure form as in the past and in our current plans.

Our adversaries, of course, can recognize all this as well. Thus, we must expect them to avoid classic armored invasions and instead adopt strategies involving fast, no-warning invasions with armored forces and/or various "asymmetric" tactics exploiting U.S. weaknesses.[14] *Current U.S. Achilles' heels involve limited capability to*

- Assure having *some* high-lethality forces in the theater on or very shortly after D-Day, even in short-warning, late-reaction cases

- Prevent (as opposed to simply deter) the use of WMD, especially if delivered by ballistic missiles or covert means

- Seize and secure ports and bases rapidly that are not adequately protected by allied forces

- Clear sea lanes of mines quickly

- Employ air-to-ground munitions against invading armies in difficult terrain (including urban sprawl) or bad weather[15]

- Conduct counteroffensives in such terrain

- Halt large dispersed threats (e.g., a broad-front infantry invasion in broken or wooded terrain).

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rather than a "piling on" against the first adversary, and a series of important adjustments in support forces and stocks.

[14]The problem of "asymmetric strategies" has been studied in RAND projects for OSD (Bennett et al., 1994, reviewing several years' worth of "future-of-warfare games" and analysis) and jointly for the Air Force and Army (led by Kenneth Watman). It was studied intensively during a Defense Science Board study as well (DSB, 1996).

[15]A number of important technical developments are under way that could mitigate the problems. These include improved sensors that can operate in imperfect weather (e.g., millimeter-wave radar and differential use of the Global Positioning System). See, e.g., the Attack Volume of AFSAB (1996). Urban sprawl is a different matter because of the potential for killing innocent and perhaps friendly civilians. There seems to be no alternative to infantry-intensive operations, although advanced technology can certainly help a great deal.

Fortunately, the analysis suggests that there are ways to remedy many of these problems. *Many Achilles' heels (but not those demanding large-scale infantry-intensive efforts) can be cured or greatly mitigated by*

- Using multilayer ballistic missile defenses
- Leveraging allied capabilities with C^4/ISR
- Exploiting the potential lethality of long-range bombers
- Planning rapid deployment or forward deployment of long-range precision fires, possibly including tactical air forces with standoff weapons, ship-based missiles and advanced guns, and mobile missile ground-force units, such as MLRS, with extended-range ATACMS and the BAT munition.[16]

These would not require significant additional forces, but would require substantially greater investments in precision munitions, mastering joint precision-strike operations, and achieving high levels of situational awareness and information dominance. Other important measures would include forward-deployed counter-mine capabilities, counter-infantry munitions for high-altitude aircraft to use, and ensuring that allies' ground forces have modern anti-infantry artillery.

Dependence on Precision Strike and Information Dominance

An important caveat should attend all of this discussion. At the heart of most optimistic assessments of U.S. capabilities, including this one, is the assumption that long-range precision-strike systems, whether aircraft or missiles, will prove to be effective. It is possible, however, that in some future contingencies the United States will find its high-tech systems being an order of magnitude less effective than the "potential." There are many reasons, including the potential for countermeasures of many types, as suggested in Table 6.4.

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[16]It should be possible to deploy such a unit, and missiles, within days. Some prepositioning would probably be desirable, especially if mobility and self-protection required additional forces. Navy options, such as those involving the Arsenal ship, might use similar or identical missiles and munitions.

Table 6.4

Potential Countermeasures to Precision Fires

Tactical Measures Not Requiring High Technology or New Forces	Passive Measures
	Use rough terrain, poor weather, and obscurance
	Move in spurts, confounding predictive systems and minimizing exposure time
	Operate in urban terrain and mix with civilians
	Disperse maximally, using minor roads and paths
	Use smoke and decoys (e.g., towed vehicles with corner reflectors)
	Proliferate inexpensive GPS jammers
	Active Measures
	Conduct infantry sweeps to suppress or defeat small teams
	Saturate area (or, e.g., ridge lines) with shoulder-fired SAMs
	Attack critical weapons (MLRS/ATACMS), CPs with SOF
	Attack critical sensors with rear-area troops, missiles
	Use rear-area units to provide warning of aircraft, missiles
	Disrupt communication links
	Disrupt accurate target-location data (GPS)
Changes in Forces or Operation	More emphasis on dismounted or at least dispersed infantry
	Old-fashioned broad-front infantry attacks
	Dispersed infantry attacks, depending on statistics for penetration
	Concentrate at "other end" when in cities
More Advanced Countermeasures Requiring Technology	Microwave self-defense systems (counters missile sensors)
	Counterbattery fire
	Threaten ships, forcing longer standoff and reduced effectiveness (mines, UAVs/missiles)
	Warning systems to trigger dispersal, smoke, noise generators, etc.
	Large-area microwave generators and EMP generators against integrated-circuit systems
	More advanced, mobile SAMS—slowing SEAD and reducing sortie rates

RAND*MR826-6.8*
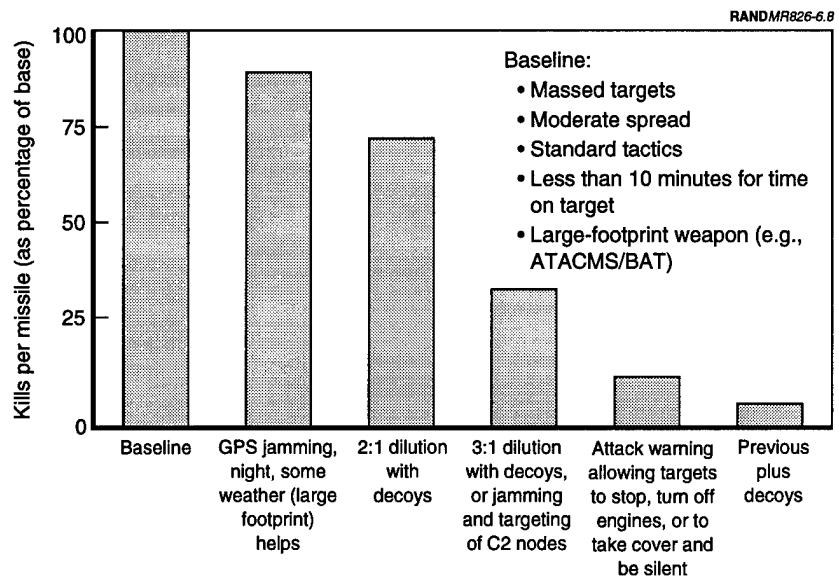
Figure 6.8—First-Cut Estimates of Countermeasure Effects (relative to program-office values, not baseline of this study)

Figure 6.8 indicates the magnitude of effects that might be obtained.[17] Yet another problem is that the worst countermeasures may not be countermeasures at all, but rather the real-world degradation in effectiveness as the result of the complex configural interactions among terrain, details of road march, sensor characteristics, sensor logic, and so on. Instead of estimating effects as is commonly done (and as is done above) by concatenating planning factors for, e.g., shots per day, munitions per missile, and kills per missile, proper analysis should generate a probability distribution for numbers of targets killed. Work in other domains suggests that the resulting distribution would have a large "tail" corresponding to very few if

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[17]Based on discussions with colleagues Randall Steeb and John Matsumura, who have done extensive entity-level analysis on the effectiveness of precision weapons in tactical-level combat. See Steeb et al. (1996), Matsumura, et al. (1996), and DSB (1996) for more discussion.

any kills under conditions where the nominal result was a large number of kills.[18] Analysis should also account for nonlinearities such as saturation effects. In part because of such concerns, our analysis assumes effectiveness levels well below program-office values and explores the consequences of even lower levels. Still greater degradations are, however, plausible.

Other Factors that Matter: Objectives and Constraints

Other factors that have major effects on what types and numbers of forces are needed and on assessments of success are assumptions about objectives and constraints, notably the following:

- Notions of what constitutes "winning" (halt, restore border, destroying X percent of the enemy's army, invade and occupy, etc.)

- Attitudes about attrition (not only to U.S. forces, but also to friendly forces and civilians, and even enemy forces and civilians).

It is worth mentioning that depending on allies for the bulk of ground forces (e.g., in Korea) is much more plausible for halting an invasion and restoring a border than is continuing the counteroffensive deep into enemy territory to destroy his war-fighting potential and stabilize the region. The more ambitious objective could require a large U.S. force and bring serious losses and a long war. Nonetheless, leveraging the capabilities of allies is often a sensible and cost-effective approach. In other cases, allied effectiveness is unlikely for reasons that equipment cannot solve.

We can only speculate about what constraints would apply in a future MRC. Despite the currently widespread view that the United States will not accept casualties, empirical and logical analysis suggests that, if the stakes are high enough, high casualties would be tolerated (Larson, 1996a, 1996b). Going into Desert Storm, many U.S. decisionmakers were anticipating 1,000 to 10,000 casualties. On the

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[18]See work on "configural problems" in mine warfare and air defense problems in Horrigan (1995).

other hand, sharply limiting casualties is likely to be a major objective in other cases where the stakes are less dramatic. Also, the low attrition in Desert Storm seems to have established optimistic expectations about war, which may constrain future presidents and commanders.

The desire to limit U.S. casualties tends to favor the use of long-range fires, whether from Air Force and Navy aircraft or from ground forces and ships. Survivable systems and related concepts of operation have a high premium.

Also, concerns about killing civilians (both friendly and enemy) argue for increased nonlethal and nondestructive capabilities, where feasible. Both "point" and wide-area capabilities are needed here.

Weapons of Mass Destruction

As mentioned above, WMD represent a major challenge, and the United States clearly needs the ability to neutralize such weapons early in a conflict. The WMD problem is critical because the threat to use WMD could deter our intervention, deter threatened states from asking for assistance, or deter allies from cooperating. And, of course, WMD could cause major casualties. This would probably precipitate an extraordinarily destructive U.S. retaliation, but we cannot rely upon deterrence alone—especially if the adversaries are desperate, as the North Koreans might be in invading the South, or as any adversary might be once the United States and its allies had begun a counteroffensive. Thus, theater missile defenses and counterforce capabilities are high on the priority list. But even with improved defenses, the WMD challenge tends to weigh in favor of a force posture and war plans that do not depend on dispatching large, densely packed U.S. forces into range of enemy WMD.

Important Improvement Options

For the middle term, our studies indicated substantial value to a wide range of special capabilities (these seem more important than more or less force structure on the margin). These involved missile defenses; airlift; long-range strike; enhanced allied capabilities

(primarily ground forces); low-observable aircraft; battle management and C[4]/ISR, and—important across the board—leveraging existing platforms (ships and aircraft) with advanced weapons; and increased sortie rates for aircraft.

In the longer term, we concluded that UAVs have high potential for defense suppression, for improved C[4]/ISR, and even for direct attacks on ground forces (see also DSB, 1996). Anti-missile defensive systems, including directed-energy weapons, such as airborne lasers, have a high potential payoff. Nonlethal area munitions not requiring precise location data also have an important role, in both MRCs and lesser conflicts.[19]

In general, the most promising approaches to dealing with the challenges and shortfalls we have identified have little or nothing to do with adding more force structure. Rather, the shortfalls are best addressed by altering the *posture* of the force (e.g., through forward deployment) or by reorganizing and re-equipping forces with new capabilities.

Examples here include rapidly deployable and perhaps partially prepositioned MLRS, ATACMS/BAT units or something equivalent, forward-deployed arsenal ships, forward-deployed small-deck carriers with attack helicopters, and B-2s with enhanced capability for attacking armored columns.

The Cost Dimension

Obviously, it is much easier to identify desirable additional capabilities than to propose ways of funding those additions. Although we do not discuss such matters here, we are heavily engaged in efforts to

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[19]Something notably absent here is discussion of advanced options for strategic bombing. Methodologically, it is difficult to demonstrate adequately the considerable value of strategic bombing. While our work to date has not adequately measured its value, there are reasons to believe that, while substantial (e.g., in destroying major elements of the air defense system and disrupting logistics and command and control), the value of strategic bombing against fixed targets, as distinct from invading armies, has often been exaggerated. Air power had awesome consequences in Desert Storm, but the most evident and significant were related to direct attacks on the enemy's forces. For an extensive discussion of strategic bombing, see Pape (1996), as well as Keaney and Cohen (1993).

identify priorities both for investment and for protecting programs in the event of cuts or general cost growth. Some of the methods being used are discussed elsewhere in the context of a different application (Hillestad et al., 1996a, b).[20]

Sizing the Force and the Two-MRC Issue

As more fully discussed in Chapter Five, the force-sizing debate currently revolves around the controversial two-MRC criterion. This focus is misdirected. Our analysis shows that the United States has more than ample capability for two MRCs in favorable or only moderately degraded situations. But it would find itself stressed in even *one* MRC in worst-case situations (e.g., a large-scale counteroffensive after a North Korean surprise attack with chemical weapons had shattered South Korea's defenses). Hence, the results of fighting two MRCs would depend on the nature of the challenge imposed by our adversaries and other variables. In favorable cases, we might be able to win both conflicts quickly and decisively. In others, we might have to hold and punish the aggressor in the second theater until, having defeated the first aggressor, we could redeploy certain forces to the second. Or we might be able to depend more on allies in one of the MRCs. In still other cases, we might find that fighting even one war would require months or years. It all depends. Thus, the two-MRC criterion, as currently defined, applies to only a small portion of the potential scenario space and is not, in and of itself, a sound basis for planning.

Nonetheless, if we must have a number, DoD has it right: "Two" is the right one. It would be folly for the United States to announce a one-MRC (or even 1-1/2 MRC) criterion, because such a strategy would give us pause before acting in crisis and would encourage

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[20]Some of the important but subtle cost issues involve time, constraints, and the value of accumulated small efficiencies. Many valuable improvements would require near-term investment, with savings realized only some years in the future. Constraints are a ubiquitous problem. Often tradeoffs are made within artificial funding categories, such as munitions with "deep attack" systems, rather than across categories. This often limits the ability to make economically and militarily rational choices. On the good-news side of the problem, we find that there can be considerable payoff, in both performance and cost savings, as the result of numerous "small" efficiencies. Sometimes looking for a package of such efficiencies is more fruitful than looking for the proverbial "silver bullet."

aggressors to exploit the opportunity of our being engaged elsewhere. Our own view is that force sizing should be based on multiple criteria, including environment shaping. We believe the more important issues relate to modernization, reengineering the forces, and strategy.

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FROM SIDESHOW TO CENTER STAGE: THE ROLE OF THE ARMY AND AIR FORCE IN MILITARY OPERATIONS OTHER THAN WAR

Jennifer M. Taw and Alan Vick

INTRODUCTION

As the Quadrennial Defense Review (QDR) progresses, most of the discussion is likely to focus on the type and number of forces the United States needs to fight major regional conflicts (MRCs) in places where aggressors might threaten U.S. national interests. This appropriate focus on large wars does, however, need to be supplemented by a serious look at the unique demands of military operations other than war (MOOTW) and on the effect they have on military readiness for MRCs.[1] In particular, the QDR needs to answer several MOOTW-

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[1]The Navy and Marine Corps have conducted MOOTW as an integral part of their routine deployments since the formation of both services. Although they each recently have been involved in larger, nonroutine operations (e.g., peace operations in Haiti, Somalia, and Bosnia), MOOTW has not caused significant operational tempo (OPTEMPO), training, or doctrinal problems for either service. This is in contrast with the Army and Air Force, which have encountered new challenges in trying to balance MOOTW and MRC responsibilities since the end of the Cold War. For these reasons, this chapter focuses on the Army and Air Force experiences. Nonetheless, further examination of how the increased U.S. involvement in MOOTW has affected both the Navy's and, perhaps more interestingly, the Marines' institutional strategies, doctrine, and training would be valuable and would certainly complement and enrich the findings presented in this chapter.

related questions before it can make force structure and sizing recommendations.[2] The central questions are

- Are MOOTW optional?

- Are MOOTW lesser included cases?

- Are additional forces needed to meet MOOTW demands?

This chapter reviews the lessons learned from recent Army and Air Force MOOTW experiences to provide the foundation for answering these questions. The final section of the chapter will seek to answer these questions and draw additional implications for the QDR.

WHY "MOOTW?"

What Are MOOTW?

U.S. defense planners have been preoccupied, at least since World War II, with big wars and the ability to mass sufficient land, sea, and air power to defeat a powerful enemy. Yet, even while U.S. forces were preparing for such warfare, they were also continuously conducting other kinds of operations, including, among others, counterinsurgency, support for insurgency, support for counterdrug operations, combating terrorism, foreign internal defense, noncombatant evacuation, humanitarian assistance, and disaster relief.[3]

Despite the steady requirement to conduct such operations, they have been considered by most planners to be lesser-included cases, at least for purposes of overall force sizing. The Department of Defense (DoD) also has rejected the notion that specialized units are called for to undertake MOOTW missions. Indeed, this became their defining feature: Although such operations represent a tremendous variety of requirements and objectives, doctrine writers have tended

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[2]The authors would like to thank RAND colleagues Carl Builder, Jim Dewar, Maren Leed, David Persselin, David Orletsky, Abe Shulsky, and John Stillion for their insights on various dimensions of the MOOTW problem.

[3]For a sense of how ingrained MOOTW are in the U.S. military's experience—and of how frequently U.S. forces have deployed for them—see: Siegel (1994), Builder and Karasik (1995), and Collins (1991).

to lump them into catchall categories that are simply used to distinguish them from large-scale combat.[4]

During the 1980s, *low-intensity conflict* (LIC) was the term of choice. Military operations were ranked by "intensity": There were high-intensity conflicts, mid-intensity conflicts, and LICs. The term LIC was problematic, however, and evolved to have a variety of meanings. It came to refer not only to the low end of a spectrum of conflict, but also to any operation when the operating environment was highly politicized. Moreover, the term rankled U.S. and foreign soldiers participating in some of the missions shunted under the LIC mantle—including insurgencies, counterinsurgencies, and counterterrorism—since those activities, though short of war, often can be very intense. The term also insulted and concerned leaders of countries receiving U.S. assistance for such LICs, since the term downplayed the violence they were facing and appeared to imply a lower U.S. priority.[5]

With the military's involvement in bigger and more conventional operations short of war after the fall of the Berlin Wall, it became clear that new doctrine and more-precise terminology were required. The term LIC, with its political baggage and multiple meanings, obviously had to be discarded, since it was proving to be a hindrance to substantive debates about the military's roles and responsibilities. Several alternative terms were considered and then rejected: *Nonconventional operations* and *noncombat operations* were briefly used; the term *peacetime contingency operations* turned up in some professional articles; *military operations short of war* enjoyed a short-lived use; *humanitarian operations other than war* was considered but never used; *crises and lesser conflicts* were discussed in one publication; and the term *lesser regional contingencies* (or *conflicts*)

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[4]For example, the U.S. Army currently includes 13 disparate kinds of operations within its catchall category of operations other than war: Noncombatant evacuation operations, arms control, support to domestic civil authorities, humanitarian assistance and disaster relief, security assistance, nation assistance, support to counterdrug operations, combating terrorism, peacekeeping operations, peace enforcement, show of force, support for insurgencies and counterinsurgencies, and attacks and raids (Department of the Army, 1993, p. 13-1).

[5]For more detailed discussions of LIC as a term and a concept, see Thompson (1989); Summers (1989); Sarkesian and Scully (1981); Van Creveld (1991), pp. 18–25 and 57–62; and Taw and Leicht (1992).

(LRCs) continues to turn up in various contexts. Finally, however, the field was narrowed down to *operations other than war* and *military operations other than war* (OOTW and MOOTW, respectively), which were used pretty much interchangeably until Joint Publication 3-07 codified *MOOTW* as the official term.[6]

Debate has not ended with the selection of *MOOTW*, however. The Army, for example, is publishing doctrine incorporating the term *stability and support operations*, since that term captures both the security and nation assistance aspects that were predominant in most recent operations. Other doctrine writers and analysts question the value of breaking out a separate category of operations other than war altogether, arguing that, whereas conventional battlefield warfare and all other operations may once have been clearly different, they now not only share many characteristics but are often blended in practice. Technology and its proliferation, urbanization, population growth, and increased international interdependence and oversight have led to the use of more sophisticated weaponry and technologies in many operations other than war and the internationalization of many internal conflicts. Simultaneously, the same technological and demographic trends have burdened conventional warfare with more political involvement down to the tactical level, a greater likelihood of urban combat, and humanitarian responsibilities. In both kinds of operations, the United States is likely to participate as a coalition partner; civilian agencies and organizations will be present near or on the battlefield; refugees will require attention and care; and force protection will be a key requirement. Moreover, the MOOTW category embraces operations that are likely to be undertaken before, during, and after large-scale warfare, further blurring the line between war and operations other than war. Breaking MOOTW out into a separate category therefore may do a

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[6]The debate over these terms focused on the role of the military in such operations. Critics of the term *MOOTW* argued that it unrealistically emphasized the military's role in operations that typically require the military to act in support of other elements of power (political and economic). Critics of the term *OOTW*, conversely, thought that the military element was that with which the military should most concern itself, and that the term should clearly distinguish the military operations from civilian efforts. In the new Joint doctrine, MOOTW are defined as "Military actions, except those associated with sustained, large-scale combat operations. These military actions can be applied to complement any combination of the other instruments of national power and occur before and after war." (Joint Publication 3-07)

disservice, by reinforcing not only the lesser-included case perception but the conceptual differentiation between types of operations that are, in reality, increasingly interrelated.

MOOTW: Continuity or Change?

U.S. military forces have always conducted MOOTW. Indeed, the category of operations is so broad that it would be hard to find a time when some U.S. troops were not conducting a MOOTW operation somewhere either at home or abroad. Barry Blechman and Stephen S. Kaplan comprehensively and quantitatively examined U.S. military involvement in MOOTW during the 30-year period between 1946 and 1975 and found an average of 7.2 incidents of MOOTW annually (Blechman and Kaplan, 1978, p. 26).[7] Even John M. Collins' (1991, p. 25) carefully selected 41 "foremost" MOOTW involving U.S. military units show U.S. military force deployments for MOOTW spanning the century from 1899 to 1989, with only a six-year gap between 1946 and 1952.[8]

During the Cold War's four decades, MOOTW deployments included U.S. military support for insurgencies and counterinsurgencies from Vietnam to El Salvador; counter- and anti-terrorist activities; refugee assistance, humanitarian assistance, and disaster relief both within and outside the continental United States; support for domestic authorities; and noncombatant evacuation operations. U.S. military forces also assisted in the "war on drugs," supporting civilian counterdrug efforts. Throughout, the U.S. military provided security assistance to foreign soldiers, sailors, and airmen through the international military education and training and the foreign military sales programs.

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[7]Blechman and Kaplan (1978) include the following in their list of activities: providing a U.S. presence, visiting, patrol/reconnaissance/surveillance, exercise/ demonstration, movement of military equipment or forces to a target, movement of a target's military forces or equipment, evacuation, use of firepower, emplacing ground forces or occupying territory, interposition, escort of a target's forces, demonstration of transit rights, blockade, and other. They log 321 such instances between 1946 and 1975, of which only 18 involved the use of firepower or other physical force (9 of which were in Southeast Asia, exclusive of activities from March 1965 through March 1972).

[8]This demonstrates one of the pitfalls of selective case studies, since Blechman and Kaplan (1978, p. 26) actually describe 1946–1955 as a period of above-average annual number of incidents.

Given the pace of MOOTW activities during the Cold War, is it safe to say that the United States is involved in more MOOTW today than it was then, as is commonly alleged? It is more accurate, perhaps, to say that the kinds of MOOTW in which U.S. forces participate have changed as the world has changed. For example, while there continues to be a vast array of MOOTW deployments, the most high-profile U.S. MOOTW today are not unconventional warfare but large-scale, mostly conventional "peace operations." Fighting communism has become less important than combating the proliferation of weapons of mass destruction (WMD). Likewise, humanitarian and nation assistance have become a foreign policy tool in a world left destabilized by the end of the Cold War. Moreover, with the superpower deadlock in the United Nations (UN) Security Council finally broken (or at least muted), there is now the possibility for the kinds of Chapter VII operations that were precluded by the U.S.-Soviet competition—operations in which the United States will usually continue to take the lead, until (if ever) the UN builds up sufficient capabilities to manage one or more large-scale military operations. Thus, U.S. forces have found themselves in Haiti, Somalia, Bosnia, Macedonia, Rwanda, Bangladesh, and myriad other places not to fight either conventional wars or communist insurgencies, but to protect humanitarian aid workers from bandits, to act as a buffer between previously or potentially warring parties, and otherwise to help provide relief to populations in crisis.

These kinds of operations tend to be higher profile than other MOOTW for a number of reasons. First, they usually require the deployment of larger numbers of soldiers, who are often more conventionally configured than those sent to assist in insurgency, counterinsurgency, counterdrug operations, or counterterrorism. Second, they are usually a response to a human disaster, whether natural or man made, and are therefore ripe for media coverage. Third, they raise sensitive questions and spark heated public debate about who—the president or the Congress—should determine where and when U.S. forces will be deployed.

These kinds of conventional MOOTW also, however, raise more fundamental questions for the military: Are "conventional MOOTW" the trend of the future? Will conventional forces need to be better prepared for such operations? If so, what, if any, tradeoffs will have to be made between readiness for conventional MOOTW and readiness

for an MRC? Which services and, within them, which types of units are best suited to these MOOTW? Should the United States begin to reassess its security priorities? Can it, and should it, shift some of its defense planning focus and resources away from big wars and toward these traditionally lesser-included cases?

The following sections begin to address these and other questions from two of the services' perspectives. The final section considers more broadly how the DoD can posture itself to handle the challenges of conventional MOOTW—and remain ready for MRCs—even as the military force structure and budget declines.

U.S. ARMY MOOTW OPERATIONS

Past, Current, and Future Operations

It is not that the Berlin Wall fell, and suddenly the U.S. Army was conducting MOOTW all over the world. It is more that MOOTW have become more prominent as a category of operations since more high-profile operations began to fall into the category of MOOTW: peace enforcement operations, including enforcement of sanctions and exclusion zones (as in northern Iraq); the protection of humanitarian assistance (as in Somalia); operations to restore order (as in Haiti); and the forcible separation of belligerent parties (as in the Dominican Republic).[9]

Prior to the fall of the wall, the U.S. Army had conducted many—and many kinds of—MOOTW. U.S. Army forces had been involved in, among other things, security assistance efforts, counterinsurgencies, operations in support of insurgencies, operations in support of counterdrug operations, operations in support of domestic authorities, noncombatant evacuation operations, combating terrorism, nation assistance, humanitarian assistance, shows of force, and attacks and raids.

Indeed, although Blechman and Kaplan (1978, p. 44) found that Army ground combat forces participated in only 18 percent of the total incidents of "force without war" between 1946 and 1975, their

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[9]These are the kinds of operations (and examples of them) currently shown in the first draft of the DoD's Joint Publication 3-07.3 (1996), pp. III-2 to III-4.

category of incidents is not nearly as broad as the MOOTW category and deliberately omits some of the kinds of MOOTW in which the Army most frequently participated during that period, including training of foreign military personnel and implementation of arms transfers (Blechman and Kaplan, 1978, pp. 10–11).[10] The U.S. Army as an institution considers itself to have a tradition in operations other than war, leading at least as far back as the Philippine-American conflict at the turn of the century (and arguably all the way back to some of the unconventional tactics used by Nathaniel Greene and others against the Redcoats during the American revolution) and visible even in the most recent Cold War operations, such as Urgent Fury in Grenada.

The turning point for the U.S. Army, however, may have been Operation Just Cause (OJC) in Panama in 1989. For all the military services, the operation demonstrated changes afoot: The Cold War was just over; OJC may have been the last U.S. unilateral intervention; the operation tested the precepts and the structure set in place by the Goldwater-Nichols Defense Reorganization Act of 1986, which placed Joint combatant commanders, such as the Commander in Chief, Southern Command, in charge of planning and executing operations; and OJC required the military to operate within restrictive rules of engagement and toward the construction, rather than the destruction and defeat, of Panama as a nation.

For the Army more specifically, OJC introduced many of the characteristics now associated with peace operations. The role of Army special operations forces (SOF) was crucial to the success of the operation; SOF and conventional forces also had to coordinate their efforts. Broader missions for combat support and combat service support (CS/CSS) units and capabilities became apparent in Panama, as such units were called upon to assist in postcombat humanitarian assistance, policing, and civil administration.

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[10]Blechman and Kaplan were not remiss in their exclusion of certain kinds of operations from their category of incidents. Rather, security assistance and some of the others kinds of operations currently encompassed in the MOOTW category (such as noncombatant evacuations and disaster relief) are not relevant to the argument that Blechman and Kaplan were trying to make about the political use of force. Thus, while their category is a useful first cut at listing MOOTW for that specific time frame (1946–1975), it would have to be augmented by the inclusion of many other operations to make it a complete listing of MOOTW during that period.

Furthermore, there was an obvious (if unrealized) requirement for coordination and cooperation between the military (especially CS/CSS), U.S. civilian agencies, and the nongovernmental organizations operating in the area. In addition, urban MOOTW's potentially insatiable appetite for soldiers[11]—entire companies of which can be dedicated to clearing and securing a single high-rise—became obvious in Panama, with implications for Army infantry, especially light infantry. And OJC also demonstrated the requirements for better training, equipment, and preparation for nighttime military operations in civilian-occupied urban terrain.

Following that operation, U.S. Army forces found themselves involved in a number of high-profile MOOTW operations in quick succession, including the provision of assistance to victims of Hurricane Andrew in the United States, Operations Restore and Continue Hope in Somalia, and Operation Restore/Uphold Democracy in Haiti. In fact, of the 33 named operations in which the U.S. Army has been involved since 1989,[12] all were MOOTW except for those operations associated with the war against Iraq.[13]

Moreover, while U.S. Army participation in MOOTW during the Cold War tended to be limited to participation by the Army SOF or to limited deployments of conventional Army troops, many of the MOOTW since 1989 have required a much larger infusion of Army forces, in more public efforts, for a longer time. Thus, for example, while Army participation in the more traditional MOOTW continues,[14] such

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[11]See, for example, Quinlivan (1995).

[12]The 33 include Multinational Force Sinai (MFO Sinai), which began in 1982, but is ongoing. The 33 operations are those in which the Army participated out of a longer list of 46 named operations in which the U.S. military has participated since 1989. In addition to those 46, the list includes two foreign operations (Daguet and Granby) and some redundancies (reflecting operations' name changes or multiple names), for a total of 51 named operations. The list is not entirely complete (for example, recent operations, such as Uphold Democracy, UN Mission in Haiti (UNMIH), and Joint Endeavor, are not on the list), but is the best available single resource. It appears on the U.S. Army Combined Arms Research Library (CARL) Web site on the Internet at <http://www-cgsc.army.mil/cgsc/carl/namedops.htm>.

[13]The list does not include security assistance and associated training operations in which U.S. Army forces also participated.

[14]In 1995 alone, the Army supported 553 counterdrug operations (*Report to the House Appropriations Committee: Support of Operations Other Than War and Its impact on TEMPO Rates*, 1995), for example, each of which involved very limited numbers of

operations as Able Sentry in Macedonia, Restore and Continue Hope in Somalia, GTMO in Guantanamo Bay, Uphold Democracy in Haiti, and Provide Comfort in Turkey have involved large numbers of conventional soldiers over prolonged periods (see Table 7.1).

As long as the United States remains committed to active participation in peace operations, the U.S. Army will continue to be in demand for these larger scale and higher-profile kinds of operations, as well as for humanitarian assistance and disaster relief operations.[15]

Table 7.1

Sample Deployments of Army Forces to MOOTW

Operation	Peak Number of Army Troops Deployed	Sample Dates
Restore Hope[a]	9,608	9/92–4/94
Uphold Democracy[b]	11,563	8/94–2/95
UNMIH	3,530	4/95–4/96
GTMO	3,800	10/94–3/96
Joint Endeavor[c]	24,143	12/95–8/96

NOTE: These data represent peak numbers of troops deployed to these operations between the specified dates, as reported by the Joint Staff J1 Personnel Readiness Division. The actual peak for the operation may have occurred before or after the listed dates, but the numbers shown nonetheless sufficiently demonstrate the large number of Army forces deployed for these more conventional MOOTW.

[a]Based on the time-phased force and deployment data for Operation Restore Hope. *Army Vision 2010* put the peak number for this operation at 10,300 in January of 1993.

[b]Based on TPFDD for Operation Uphold Democracy.

[c]Operation Joint Endeavor is the NATO operation to implement the Dayton Peace Agreement in Bosnia.

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specialized Army troops, as did Operation Sea Angel, the 1991 disaster relief effort in Bangladesh.

[15]See *Army Vision 2010*, p. 6, for a sense of the role of the Army in joint MOOTW operations. The Army provided 43 percent of the U.S. force for Operation Restore Hope, for example, 98 percent of the force for Operation Able Sentry in Macedonia, 36 percent of the force for GTMO, and 92 percent of the force in Joint Endeavor.

Assessing U.S. Army Capabilities for MOOTW

The Army brings skilled, highly trained, and disciplined people to MOOTW, rather than platforms or technologies. The Army's enormous CS/CSS capabilities; SOF; and large, light ground force make it uniquely suited to many of the requirements of the kinds of "big" MOOTW in which the United States is participating.

Army CS/CSS personnel (e.g., engineers; military police; and medical, transportation, water purification, and signal units), are especially valuable in peace operations, support to domestic civil authorities, and disaster-relief, humanitarian-assistance, security-assistance, and nation assistance missions.

Army SOF have more specialized capabilities for MOOTW. Indeed, among the principal SOF missions and collateral activities are foreign internal defense, unconventional warfare, combating terrorism, civil affairs, psychological operations, coalition support, humanitarian activities, counterdrug activities, and security assistance. The U.S. Special Operations Command also includes counterproliferation as a principal SOF mission (U.S. Special Operations Command, 1996).

In addition to these capabilities, the Army brings a large, light ground force to MOOTW, a valuable asset in manpower-intensive peace operations, where presence and security are key requirements.

While the Army has these assets, however, they are not always deployed to MOOTW or used appropriately once there. Access to reserve component and echelons-above-division forces, for example, may be limited. And combat-unit commanders may not know how best to employ such units once they are available.

The bulk of CS/CSS, psychological operations, and CA capabilities resides in the RC. Without Presidential Selective Reserve Call-Up (PSRC), which activates reservists for deployments, the limited active-component capabilities in these unit types will be augmented only by volunteers, who may show up in either inadequate numbers or an inappropriate mix of capabilities and specialties. Thus, in Somalia, where PSRC was not authorized, although CA personnel were plentiful, they did not represent the most useful combination of skills and language capabilities.

While the need for PSRC could be considered a lesson learned—reservists were called up for both the Haiti and Bosnia operations—there is some concern that repeated activation of reservists will actually lead to a drop in both RC enlistment and retention. The conventional wisdom is that the reserves can be called up every five years, yet since 1991, they have been called up three times (including Operation Desert Storm). Moreover, some of the personnel most needed in MOOTW (e.g., doctors and civil-affairs personnel) tend to be those who will be most hurt professionally by repeated call-ups.

Another potential problem is that, while the Army's organization maximizes its capabilities for MRCs, it is less appropriate for some kinds of MOOTW. For example, in peace operations and disaster relief efforts, vertical engineering capabilities may be required. These are echelons-above-division capabilities, but the task organization for the mission is likely to be at the division level. The inclination will be to rely on division-level combat engineers who are trained and equipped to tear down obstacles rather than to build infrastructure. Similar distinctions between division and corps-level capabilities also exist for military police and military intelligence.

Finally, even if the right forces show up in the right place at the right time, there is some evidence from recent operations that combat commanders are not sufficiently trained or prepared to employ CS/CSS and SOF units appropriately. There was concern following the U.S. effort in support of UNMIH, for example, that the civil affairs effort was insufficiently coordinated throughout the theater. In the same operation, a deliberate attempt was made to avoid a similar problem with regard to logistics by placing the operations officer of the Joint Task Force's logistics component under the operational component.[16] Collocating the logistics and operations personnel was an ad hoc response to the requirements of the operation, however, and an insufficient solution for the broader problem of command and control of SOF and CS/CSS in MOOTW.

Thus, although Army forces are uniquely suited to many of the requirements of the kinds of "big" MOOTW in which the United States is participating, access to them, and appropriate use of them,

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[16]Author's interview with U.S. Army personnel returned from UNMIH, Carlisle Barracks, Penn., May 2, 1996.

is limited to some extent by the Army's combat focus and its consequent organization and training. The challenge for the U.S. Army is to prepare for the huge variety of possible MOOTW, including the "big" MOOTW, while maintaining its ability to defeat large-scale aggression. The Army must do this, moreover, as defense budgets (and, therefore, manpower, infrastructure, and equipment acquisition) decline.

Steps to Improving MOOTW Capabilities

In recognition of this challenge, the U.S. Army has been assessing its performances in past MOOTW, considering potential future requirements, and has begun to adjust doctrine, training, force structure, and equipment accordingly. The Army has published, for example, Field Manual (FM) 100-23, *Peace Operations* (1995) and updated or created several other manuals to represent the requirements of MOOTW.[17] Even the Army's keystone doctrine manual, FM 100-5, *Operations*, updated in 1993, now has a brief chapter on MOOTW.

The Army has also made some adjustments to training to meet emerging MOOTW requirements, especially those for peace operations (specialized training already existed for counterinsurgency, combating terrorism, and so forth). For example, either MOOTW or peace operations are now included on the mission-essential task lists (METLs)[18] of those units most likely to deploy to peace operations, including USARPAC's 25th ID, USAREUR's 5th Corps and its two divisions, and the 18th Airborne Corps (although it remains a corps-

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[17]For example, in addition to FM 100-23, the Army has written or revised the following: FM 100-20/AFP 3-20, *Military Operations in Low Intensity Conflict*, (1990; currently being revised as *Stability and Support Operations*, due the first quarter FY97); FM 7-98, *Operations in Low Intensity Conflict* (1992); FM 100-66, *OPFOR in Operations Other Than War* (due fourth quarter FY97); FM 8-42 *Health Operations in Low-Intensity Conflict*, (1990); FM 63-6, *Combat Service Support in Low-Intensity Conflict* (1992); the CALL Newsletter, "Operations Other Than War: Peace Operations"; the CALL *Handbook for the Soldier in Operations Other Than War (OOTW)*, (July 1994); other CALL reports on specific MOOTW; and a variety of service school publications on MOOTW. Some prior manuals have also been updated to include reference to, and guidance for, MOOTW, including some unit-specific tactics, techniques, and procedures manuals (TTPs).

[18]METLs list what tasks each unit must train for.

level METL task and is not included in the 3rd Infantry, 10th Mountain, 82d Airborne, or 101st Airborne divisions' METLs).

Training for peace operations takes place at many levels. Officers and noncommissioned officers are introduced to peace operations as a part of their professional military education. Individuals, units, and staffs will receive specific predeployment training if they are tapped to conduct peace operations. Units can also conduct peace operations exercises at the Joint Readiness Training Center in Louisiana (where specialized peace operation rotations are now offered in addition to standard training rotations) and at the Combat Maneuver Training Center in Europe (where a MOOTW module has been incorporated into the standard rotation for all units).

Through such education and training, soldiers are introduced to some new tasks (negotiation and mediation, for example), and familiar tasks are recast in the context of peace operations (marksmanship, first aid, interaction with the media, patrolling, and so forth). Units also participate in situational training exercises, in which they are presented with scenarios (such as the discovery of a dead body, a food riot, or a hostage situation) and asked to develop appropriate responses and train accordingly.[19]

In addition to adjustments to doctrine and training, the Army has begun to reassess its force structure with respect to its suitability for MOOTW. The concept of modularity, for example—creating smaller, more deployable, more self-sufficient units to use as building blocks in tailoring operation-specific force packages—will soon be tested (TRADOC, 1995). There is also recognition that cross-leveling (sharing soldiers across units) is affecting readiness and that high OPTEMPOs and personnel-deployment tempos, as well as cultural resistance to MOOTW, are leading to lower morale and, many worry,

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[19]Notably, the Army has gone through a process of lessons learned even in developing training for peace operations. The engineer officers' school at Ft. Leonard Wood, for example, initially responded to more-frequent deployments to peace operations by developing a four-day course on the subject. Later, as it became apparent that, for engineers, many of the skills required for peace operations are very similar or identical to those required for MRCs, the school scaled back the peace operation course to a single day.

lower retention rates.[20] The Army itself has commissioned studies of these issues in an attempt to better understand the force structure required to maintain a highly flexible, deployable, professional, and ready force.

Finally, equipment requirements are also being reassessed. The ASV 150, for example, which is currently in the program for both the Army and the Air Force (in different configurations), is precisely the kind of wheeled, armored vehicle that will allow the Army to conduct overt patrols in urban neighborhoods. Nonlethal weapon technologies show some promise for creating a middle ground between nonuse of force and massive force. Also, very basic items—such as lighter-weight (and less imposing) body armor, like that worn by police—should be distributed more widely within the force. Although some soldiers in Haiti and Somalia had these items, many others complained that they did not. In addition, Army after-action reports describe in detail how each of the recent operations could have benefited from better access to, and more training on, a variety of computer hardware and software with the potential to enhance both signal and intelligence capabilities.[21]

MOOTW Effects on MRC Readiness

The effects that deployments of Army forces to MOOTW may have on overall Army readiness for an MRC are diverse and highly dependent on a huge variety of factors, including the nature and location of the operation, the clarity or ambiguity of the mission, and the kind of coalition involved. Moreover, any given operation's effects will also vary according to the soldier's military specialty and unit type.

Indeed, there are two ways to consider the potential for MOOTW to disrupt readiness. MOOTW could have such totally different

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[20]There are a number of studies on the negative effects of these operations on morale. No statistical data are currently available supporting claims that they are also contributing to a decline in retention, although that is a concern shared across unit types and ranks.

[21]Clearly, better capabilities in these areas would benefit MRC efforts as well, but the greater requirements for human intelligence and the need, frequently, for simpler communication between smaller units over greater distances in MOOTW make these particularly desirable for MOOTW.

requirements that they would necessitate the development of dedicated force structure, equipment, training, and doctrine, thereby drawing resources away from MRCs into a completely separate enterprise. Some would argue that SOF are precisely such an enterprise. Yet, SOF's primary emphasis is on providing unconventional support to conventional forces in MRCs—in effect, conducting the MOOTW component of conventional warfare—and it is a secondary benefit that their skills and capabilities can be readily applied to many MOOTW outside the context of conventional war.[22]

Instead, the MOOTW that have proven to be the most hazardous to readiness are not the highly specialized operations but those that are most like MRCs and most likely to employ—and often stress—resources and personnel that would be needed should an MRC arise. Participation in an extended and large-scale peace operation, for example, requires the most conventional forces for the longest period of time, with implications for training, deployability, and equipment availability.

Yet, even the effects of deployment to peace operations vary by unit type. For example, such deployments arguably provide superior training opportunities to many CS/CSS forces, who gain real-life experience doing basically the same thing in MOOTW as they would do in an MRC. On the other hand, combat arms units' skills are likely to deteriorate during extended peace-operation deployments. Likewise, although some unit types are sufficiently plentiful that they are unlikely to be stretched thin by deployment to MOOTW (e.g., armored infantry units), others are so limited that their use in a MOOTW could have a serious effect on readiness for an MRC (e.g., low-density force-support package units, such as the 7th Transportation Company).

Successes and Problems in Accomplishing MOOTW Tasks

Critics of Army efforts point out an apparent post-Somalia tendency for extreme and debilitating concern with force protection, equally

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[22]SOF forces have been frustrated and concerned by the tendency to equate SOF and MOOTW (and before that SOF and LIC), since such a tendency is seen as marginalizing their importance.

debilitating concern about mission creep, lack of familiarity with and understanding of the environment and operational requirements in MOOTW, and resistance to MOOTW overall. There may be some grounds for concern, but they are not pervasive. It is true, for example, that the 10th Mountain Division's efforts in Haiti were severely circumscribed by force-protection considerations. The 25th Infantry Division, on the other hand, eased force-protection requirements in Haiti and showed a greater appreciation for the need to interact more informally with the local population.[23] Concern about mission creep slowed and limited the conventional Army's response to Hurricane Gordon in Haiti; at the same time, however, Army special forces units and personnel from the 96th CA battalion were able to provide immediate assessments of local damage and assistance requirements following the storm.[24]

To be fair, not only is the Army in the process of assessing and responding to lessons learned from each operation as demonstrated by changes in doctrine and training, but it must be remembered that the Army is also operating within the parameters of national security decisions over which it has little influence and, moreover, is being asked to do more with less. As long as MRCs remain the Army's primary mission, it cannot be expected to make radical adjustments to doctrine, training, equipment, and force structure to meet the requirements of MOOTW. Indeed, such adjustments may not be necessary. Most of the basic skills and capabilities required for the variety of potential MOOTW already exist in the force. The question is whether they are sufficiently accessible and exist in adequate numbers to allow Army deployments to MOOTW without having detrimental effects on MRC readiness.

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[23]Author's interviews with Army personnel returned from Haiti, Carlisle Barracks, Penn., May 1996; author's interviews with Army personnel returned from Haiti, Ft. Bragg, N.C., June 1996.

[24]Author's interviews with 3rd Special Forces Group personnel, 96th CA Battalion Commander, Ft. Bragg, N.C., June 1996; author's interview with Army Strategic Studies Institute personnel, June 1996. Similar concerns about force protection hampered U.S. efforts in Macedonia, where risk avoidance led in one instance to U.S. commanders refusing to man an observation post in the U.S. sector with U.S. personnel. During Able Sentry, U.S. patrols were also prohibited from deviating from their prescribed patrol route, making it impossible for them to investigate situations in the border area fully. They were also not allowed to patrol at night, although other nations' peacekeepers were doing so regularly.

THE U.S. AIR FORCE IN MOOTW

Jet aircraft do not typically come to mind when the subject of MOOTW is brought up. Rather, it is images of Marines slogging through tropical rice paddies or soldiers patrolling Mogadishu's dusty back streets that exemplify small-scale conflict for most people. Despite that perception, the Air Force and its predecessors have been heavily involved in MOOTW for 80 years,[25] flying in over 800 such operations since 1916.[26] From the Berlin Airlift to more recent operations, such as Operation Joint Endeavor in Bosnia, the Air Force has been deeply involved in all manner of lesser conflicts and non-combat operations. Yet, as is the case for the Army, recent peace operations have dramatically increased the "peacetime" demands on the Air Force.

Although the Air Force has participated in many MOOTW, it would be misleading to suggest that these operations are in any way central to the Air Force as an institution. Indeed, in stark contrast to the Army, these operations have had little effect on Air Force doctrine, training, culture or organization.[27] For the airman, delivering relief supplies is not all that different from delivering any other cargo. The airfield may be in rough shape and the air traffic control may be handled by the UN, but overall the mission will not look all that different from any other airlift mission. Similarly, for reconnaissance and strike aircraft conducting peace operations, there are targets in the air and on the ground to be detected, identified and engaged. The rules of engagement may be stricter; command and control may be more complex; and the target set may be more selective, but the nature of air operations remains fairly constant. The political, cultural, demographic, economic, and topographic details that can

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[25]The Army Air Service, Army Air Corps, and Army Air Force.

[26]Our database contains 858 operations. Principle sources were U.S. Air Force (1991); Defense Forecast International's *Air Force Presence Database*, an electronic database covering Air Force operations between 1981 and 1996; histories produced by the Command Historians at Pacific Air Forces, U.S. Air Force Europe, and Air Mobility Command; and data provided by the Current Operations Group, Directorate of Operations, Headquarters, U.S. Air Force.

[27]The Air Force is working on its first MOOTW doctrinal publication, which was due to be released sometime in 1996. The Army, on the other hand, has published many documents on LIC, counterinsurgency, and MOOTW and has been the lead agency for most Joint publications on these subjects.

make MOOTW so vexing for ground forces generally have had less impact on air operations, in part because the air elements are often not based in the country upon which the operation is focused. Air crews experience the operation as a transitory experience from relatively high altitudes, then typically return to a base removed from the conflict or humanitarian crisis that motivated the operation. Consequently, individual airmen do not need the level of specialized training for MOOTW that ground troops may require, and they have not felt the need for unique doctrine or organizations to meet MOOTW requirements.[28]

Past and Current Operations

The majority (67 percent) of Air Force MOOTW have been disaster-relief or humanitarian-aid missions. These operations were usually small and short lived, typically involving under ten aircraft flying a few tens of sorties over a few days. These missions are easily handled by existing force structure and have not undermined Air Force force readiness nor caused serious OPTEMPO problems. Military assistance, peace operations, and foreign internal defense account for 7, 5, and 4 percent of operations, respectively. Medevac, search and rescue, hostage rescue, logistical support, strikes and raids, and a variety of special missions make up the remaining operations.

As Table 7.2 suggests, the relative mix of Air Force MOOTW activities has changed with the end of the Cold War. Disaster relief and humanitarian aid still make up the bulk of operations, but their relative proportions have reversed. Military-assistance operations and foreign internal-defense operations are both down, while peace operations have more than doubled. Peace operations, moreover, while only 9 percent of total operations, represent 83 percent of all MOOTW sorties flown since the end of the Cold War. *Thus, just as for the Army, peace operations are the important determinant of the Air Force's present OPTEMPO.*

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[28]Air Force special operations personnel and security policeman are two exceptions to this observation. They both often have intimate and prolonged contacts with native populations during air operations.

Table 7.2

Cold War Versus Post–Cold War MOOTW
(percentage of operations)

Type of Operation	1916–1988	1989–1996
Disaster Relief	48	17
Humanitarian Aid	17	50
Military Assistance	8	2
Peace Operations	4	9
FID	5	1
Misc.	18	21

The Air Force is currently supporting peace operations in Bosnia and Iraq. In Bosnia, as part of Operation Joint Endeavor, it is providing airlift, reconnaissance, and close support to Joint forces. Its aircraft are also helping enforce the no-fly zone. In northern Iraq, as part of Operation Provide Comfort, the Air Force has enforced a no-fly zone and restrictions on the movement of Iraqi ground forces since 1991. In southern Iraq, as part of Operation Southern Watch, the Air Force—along with Marine Corps, Navy, and allied aircraft—is enforcing a no-fly zone below the 32nd parallel.[29]

The Impact of MOOTW on Air Force Readiness for Major Wars

Most Air Force MOOTW do not typically increase peacetime OPTEMPO. Recent peace operations, on the other hand, have proven to be more of a problem because of their size, duration, overlapping nature, and demands on specialized assets (e.g., Airborne Warning and Control System, intelligence platforms, and SOF aircraft), as well as on the fighter force. As the Air Force force structure has come down, the remaining forces and personnel have been stretched thinner and thinner across peace operations, exercises, and major war responsibilities. In interviews at several Air Force Major Commands, Air Force personnel told one of the authors many stories about how this higher OPTEMPO is causing family

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[29]In September 1996, the United States expanded the southern no-fly zone north to the 33rd parallel. U.S. and British aircraft are enforcing this zone; French aircraft are limiting their patrols to below the 32nd parallel.

problems, decreasing retention, and degrading combat readiness. This perception is widespread in the Air Force, but the data necessary to evaluate these claims are only now beginning to be collected. At this point, we can say that many units are experiencing deployment rates that greatly exceed the Air Force's goal of no more than 120 days annually. Some fighter units have found that peace operations have cut significantly into time and sorties available for combat training. Since sorties flown in peace operations typically afford few opportunities to practice the more difficult combat tasks, they do not help prepare fighter crews for MRC missions.[30] Thus, if the current pace of peace operations continues, the Air Force is likely to face a training, readiness, and morale problem.

A New Approach to Peace Operations?

The Air Force and DoD have several options to deal with this challenge. First, they might determine that a somewhat lower combat readiness for some units or the Air Force at large is acceptable in the face of expected threats and warning times. Second, they might determine that a greater percentage of the Air Force force structure needs to be in the active component, where it can assist more readily with peace operations. Finally, they might attempt to influence the demand side of the equation by seeking to limit the number or size of DoD commitments to peace operations.

The first option does not appear to be credible in the near term, given short-warning threats in Southwest Asia and Korea. It may be worth reconsidering in the future if the threat situation changes fundamentally. The second option is likely to be problematic because of the increased costs associated with moving forces from the reserve to the active force, but it nevertheless deserves a closer look. At the least, the Air Force should explore ways that reserve forces might contribute more to ongoing peace operations. At the same time,

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[30]In a typical no-fly zone enforcement sortie, a fighter air crew will take off, refuel, fly formation—often for several hours—and land. While not trivial, these are among the easier tasks that an air crew must be able to perform. In contrast, the most difficult tasks, such as air to air combat, night surface attack, or low-level flight, are rarely called for and, hence, rarely practiced in peace operations.

there may be some MRC capabilities that could be shifted to the reserve.

In our judgment, the greatest near-term leverage on this problem is found on the demand side. What we have in mind is not so much that DoD question the wisdom of participating in peace operations, although there is some value in asking tough questions prior to sending forces to these operations. Rather, we would suggest that the Joint Staff, theater commands, and Services look very hard at the putative requirements for these operations. Current deployments, plans, and concepts for air peace operations reflect an operational orientation more appropriate for high-intensity combat than peace-keeping. This suggests that a new approach to peace operations is called for that employs military forces in a manner consistent with the unique political and military objectives of peacekeeping. We propose that the Air Force take the lead to develop this new approach to air peace operations.

OSD, Joint Staff, Air Force, and theater planners need to look hard at U.S. objectives for a particular operation to ensure that the deployed forces are sized to those objectives rather than to more demanding combat tasks. For example, it is appropriate to ask what U.S. (and allied or UN) leaders hope to accomplish with a no-fly zone. In many cases, the objective is likely to be to deny the adversary routine use of some specified airspace. It is not necessary to seal the no-fly zone hermetically to accomplish this mission. Thus, under these circum-stances, combat air patrols need not be flown 24 hours a day. Good surveillance, combined with random patrols, should be sufficient to deter most flights. Admittedly, this would be unacceptable in some cases, but in others, an occasional violation would not be significant. If the violations continued, the appropriate strategy (admittedly beyond the decisionmaking authority of the air component com-mander) might be to strike the airfields from which the violating air-craft originated. More modestly, patrols could be stepped up if the situation warranted. In short, a minimalist approach to these opera-tions, one that deployed only absolutely essential aircraft and no more, could lessen the demand for overseas rotations.

Technology can make a major contribution by reducing the number of expensive manned platforms that need to be deployed to such contingencies. Unmanned aerial vehicles (UAVs) and air-implanted

ground sensors can meet many surveillance requirements at lower cost and with fewer deployed personnel than manned platforms. Investing in these systems may, ironically, be the most cost-effective way of enhancing Air Force capabilities for MRCs. By freeing expensive manned systems to focus on their MRC tasks, relatively cheap UAVs and ground sensors can contribute to both the MOOTW and MRC missions.

The Air Force should also consider implementing Service-wide refresher training requirements for crews returning from prolonged peace operations. The 1st Fighter Wing at Langley AFB has done this, requiring all crews to go through a refresher program before they are recertified as mission ready for all MRC tasks. This way, whatever training shortfalls that take place during the deployment can be made up relatively quickly.

Assessing Air Force Capabilities for MOOTW

In assessing Air Force capabilities for current and future MOOTW, consideration of general mission categories (e.g., disaster relief) is less helpful than evaluation of the specific tasks the Air Force will be expected to accomplish. Historical review shows that the Air Force has accomplished or been expected to accomplish the following tasks:

- Airlift relief supplies

- Insert, support and extract special forces during operations in denied territory

- Evacuate noncombatants out of dangerous situations

- Airlift special cargoes or passengers

- Find and rescue victims of shipwrecks, plane crashes and natural disasters

- Advise, train, and equip friendly nations to defeat internal or external threats

- Monitor and enforce peace agreements

- Provide surveillance and transportation for drug interdiction efforts

- Conduct raids against high-value targets in denied areas
- Transport and provide surveillance and fire support for large intervention forces.

Each of these operational-level tasks can, in turn, be broken into more-detailed tactical-level tasks. For example, enforcing peace agreements might entail enforcing a no-fly zone, monitoring a zone of separation, providing close support to peacekeepers on the ground, transporting peacekeepers, or providing intelligence to Joint or combined commanders. These tasks can also be broken down into more-detailed tasks, and so on. For our purposes, it is most useful to stay at the operational level with occasional forays down into the tactical level.

Generally, the Air Force has successfully accomplished such tasks, either because it was well equipped and trained for the task or, in cases where it was not, through the flexibility, creativity and initiative of its personnel. Although no operation appears to have failed because of inadequacies in Air Force MOOTW capabilities, that is not to say that there have not been shortfalls.

In Bosnia, for example, surveillance shortfalls and extreme sensitivity to the possibility of civilian casualties prevented the Air Force from effectively countering Serb artillery, mortars, and snipers firing on Sarajevo. It is too early to tell how much air power can contribute against these targets, but it appears that available technologies could significantly improve Air Force capabilities.

There also are cases where the Air Force has not yet been called upon to do a particularly difficult task. For example, although the Air Force struck Iraqi WMD facilities during Desert Storm, it has not yet been tasked to destroy a WMD facility in a peacetime raid, perhaps in part because of known limitations in deep-penetrating munitions.

On the other hand, there also are cases where air power might have made a major contribution if it had been available. For example, AC-130 gunships and even jet fighters might have made an important contribution on October 3, 1993 ("Bloody Sunday") in Mogadishu, Somalia. On that day, U.S. Army Rangers and Delta Force commandos were ambushed and trapped by a large Somali force, resulting in the most intense small-unit fighting since the Vietnam War and over

100 U.S. casualties. The endurance, precision, and shock effect of fixed-wing fire support might have suppressed Somali fire sufficiently to allow helicopter extraction of the Rangers. At the least, it would have significantly increased the fire support available to U.S. soldiers and probably would have saved some lives in the process. In the event, this capability was not available because AC-130s that had been supporting the operation from Kenya had been withdrawn, and Air Force fighter aircraft were never deployed.

Thus, the Air Force's MOOTW challenge is less about correcting shortfalls associated with past failures than about improving and expanding Air Force capabilities to accomplish more-demanding future tasks. Indeed, the greatest challenge may be thinking more expansively and creatively about how to apply air power in future MOOTW. This is particularly important given new sensor, weapon, and aircraft technologies that, if embraced by the Air Force, could substantially increase its capability to accomplish MOOTW tasks. With that in mind, the following are some tactical-level tasks that the Air Force could be assigned in future MOOTW (and that it would have great difficulty doing today):

- Detect, track, and destroy WMD

- Maintain persistent high-resolution surveillance of a point target (e.g., hostage location)

- Detect, identify, and attack personnel in urban and heavily wooded areas

- Detect, identify, and attack artillery, mortars, and snipers

- Protect convoys

- Control mobs

- Secure an urban landing zone.

In some situations, it will not be possible to accomplish these tasks wholly or at all from the air. On the other hand, advances in sensors, unmanned aircraft, and nonlethal weapons have the potential to increase significantly the contribution that air power can make in many MOOTW situations.

Foliage-penetrating radars; hyperspectral image processors; thermal imagers; long-range, electro-optical devices; and air-implanted ground sensors can be combined to give airborne platforms an enduring, often high-resolution, portrait of activities in urban and wooded areas.[31] When mounted on unmanned aerial vehicles, these sensors can often go where manned platforms would not be risked or could not go. For example, a small battery-powered UAV could be equipped with a thermal imager and flown at building level or below to provide high-resolution, covert, night monitoring of activities during urban peace operations. Other sensors, such as foliage-penetrating radar or synthetic aperture radar (SAR), could be carried by long-endurance, medium-altitude UAVs to provide monitoring of wooded areas or roads. Finally, a number of nonlethal weapons, such as incapacitating agents or net barriers, could be deployed from airborne platforms.

The Air Force has played an important role in MOOTW for many years and is likely to be called upon to do even more in future operations. While most of these operations are lesser-included cases that can be handled well with existing capabilities, a number of new tasks are likely to greatly stress Air Force surveillance, command and control, and strike assets. Indeed, a number of the new tasks simply cannot be done without the acquisition of new sensors, aircraft, and weapons. That said, it must nonetheless be remembered that technology is only part of the answer. The Air Force also needs to think more creatively about the application of air and space power in unconventional settings, developing new doctrine, tactics, organizations, and procedures as necessary to meet the messy challenges of the late 20th century.

PREPARING FOR FUTURE MOOTW

Nature of MOOTW

Different kinds of MOOTW levy different requirements on the services. Indeed, as the above discussion of the Army and the Air Force demonstrates, grouping such disparate operations simply because

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[31]For a more detailed discussion of these technologies and their application in MOOTW settings see Vick et al. (1996).

they share the common characteristic that they are **not** war is problematic: Doing so not only fails to acknowledge that many of them can be vital components of conventional war but also obscures the key differences among them.

For example, while both the Army and the Air Force appear to have absorbed the manpower and resource costs of such missions as security assistance and assistance to counterdrug operations, it is proving more difficult to meet the needs of peace enforcement operations while maintaining readiness for big wars. Similarly, it would be difficult to conduct meaningful analysis of joint requirements for MOOTW without disaggregating and distinguishing between such efforts as noncombatant evacuation operations and peacekeeping or between counterinsurgency and disaster relief. Neither can determining training, equipment, and force structure requirements be done in the aggregate: Consider, for example, the very different requirements for combating terrorism and shows of force. Preparation and deployment for different kinds of MOOTW will also have different effects on MRC readiness: security assistance or combating terrorism are unlikely to draw away key MRC assets; a prolonged peace-enforcement operation, on the other hand, is more likely to do so.

Disaggregating how different kinds of MOOTW affect the services is only one side of the equation, however. Operations' demands do not fall evenly across the Services. For example, air operations may be less affected by the subtle political nature of many MOOTW than are ground operations: Airmen perform basically the same kinds of missions high above the ground whether in an MRC or a MOOTW, but soldiers are faced with the challenges of making tactical, on-the-spot decisions that can have strategic implications (such as whether to return a sniper's fire). This, in turn, means that Air Force and Army MOOTW training and doctrine requirements are very different. The Army, for example, must develop new TTP manuals for the conditions and standards present in MOOTW, while the Air Force has less reason to do so.

Not only does involvement in MOOTW have some unique implications for each Service, but MOOTW preparation and deployments will also have distinct implications *within* the services for each unit type, component, and echelon. Within the Army, the most strained

personnel tend to reside in CS/CSS and special operations units and are usually in the reserves (in particular, engineer, military police, transportation, civil affairs, and psychological operations units). Strains in the Air Force, in contrast, tend to be determined by platform type. Personnel operating SEAD and Airborne Warning and Control System aircraft, for example, have experienced particularly high OPTEMPOs related to MOOTW deployments.

Effects on MRC Readiness

A key measurement of the effects of various kinds of MOOTW deployments on the Services (and within the Services) is how MRC readiness is affected. Although it is interesting to examine how doctrine, training, and force structure have been adjusted to meet the requirements of MOOTW, such changes nonetheless remain marginal. The Services' priorities are driven by their primary mission: to prepare for, deter, and conduct large-scale military operations. Thus, even though big wars are the least likely contingency, they remain the most important.

There is also concern within all of the Services that deployments to prolonged peace operations and to continuous counterdrug operations may diminish MRC readiness, particularly in some key units. For both Services, high OPTEMPO is producing long and frequent TDYs that are degrading—at least temporarily—some elements' proficiency at combat tasks and disrupting professional military education. In addition, there is resistance in both Services to what are often considered less attractive or compelling missions: Many soldiers and airmen who enlisted to prepare for the nation's wars are less sanguine about trash detail in Cap Haitien, policing duties in Mogadishu, or in the words of one pilot, "turning jet fuel into noise in the sky over Bosnia."

Of course, some of the stress on key assets may be reduced by using alternative sources of manpower and equipment. Private contractors have been touted as one means of relieving some of the pressure on Army CS/CSS and low-density units. Privately contracted linguists, for example, proved extremely valuable in recent operations in Somalia, Haiti, and Bosnia, and contractors were tasked with

many of the logistical responsibilities in those operations. Such alternatives are not ideal, of course,[32] but contractors offer a solution to high OPTEMPOs for some elements of the force. Greater and more flexible access to the reserve component would also be a means of dispersing the effects of MOOTW deployments, lightening the load on active units and diminishing the adverse effects on MRC readiness.

Technological developments also hold the promise of improving MOOTW capabilities and, in some cases, helping maintain MRC readiness. For example, the Air Force could benefit from further advances in UAVs, sensor miniaturization, and robotics. These technologies could give the Air Force the ability to conduct high-resolution surveillance of ground activities from low-flying small UAVs and from interconnected arrays of ground sensors that were implanted from the air. Many of the same technologies could make ground forces more effective as well. New man-portable sensors that can instantly identify a sniper's firing location offer an important new capability to the Army. Small hand-launched UAVs also have great potential for Army units, giving small-unit commanders an organic reconnaissance asset that can look "around corners" or "over the hill."

To the extent that these new technologies can replace manpower or systems that should be training for MRCs, they can help with the MRC problem as well. For example, if a UAV equipped with SAR and MTI can effectively monitor movement of armor, it might replace JSTARS in some peace operations (e.g., Bosnia), freeing the manned platform to train for its MRC role. Two technologies that may help substitute for Army manpower are unattended ground sensors and UAVs. The former can replace some observation and listening posts and possibly reduce patrolling requirements. Low-altitude UAVs have the potential to reduce patrolling requirements; medium-altitude UAVs might replace some manned Army airborne surveillance platforms. It is not clear how much these technologies would free Army units for MRC training. Since MOOTW missions are typically

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[32]There have been concerns that contracted linguists have personal agendas or associations and that some contractors have inflated prices and slow response times.

manpower intensive for ground forces, they may be less amenable to technology substitutions than air operations.

Overall, both the Army and the Air Force are coping with the dual challenge of preparing and deploying for frequent MOOTW while also meeting their predominant requirement to remain ready for MRCs. And they must do more with less, as budgets, force structure, and infrastructure shrink. The challenge is to identify which requirements of which MOOTW must be met and how doing so is likely to strain MRC readiness. Unfortunately, there is no simple answer or algorithm for making such determinations, since MOOTW themselves are so varied and since they have such different effects on and within the Services.

Implications for the QDR

At the beginning of this chapter, we listed several questions that we believe planners involved in the QDR will need to answer before finalizing recommendations on force structure. From our review of past Army and Air Force MOOTW experiences, we believe that these questions can be answered as follows:

- **MOOTW are here to stay.** As discussed above, MOOTW are not new, and they are not likely to go away. Particular types of operations (e.g., peace operations) may come and go, but the overall demand is likely to remain high enough to justify a more explicit incorporation of MOOTW into defense planning. Although future presidents may try to limit U.S. MOOTW involvement, a number of situations (e.g., WMD proliferation, terrorism, noncombatant evacuation) are likely to trigger a U.S. response regardless of the policy preferences of a given administration.

- **MOOTW are not necessarily lesser-included cases.** In the past, many planners viewed MOOTW as lesser-included cases that any trained military unit could accomplish. This has been true in a few cases, but ground forces have usually required specialized training and a different mix of skills, units, and equipment than they would take to an MRC. In contrast, MOOTW tasks for air forces are often a less-challenging version of conventional operations, but even they often need different mixes of equip-

ment and skills and have had to develop ad hoc organizational structures, information flows, and interagency relationships. Both ground and air forces face fundamentally different rules of engagement in MOOTW. Despite special training on MOOTW rules of engagement, the transition from warrior to policeman is often difficult and has produced tragic outcomes as a result.[33] Finally, the lesser-included case argument ignores difficult MOOTW that the military could be called upon to accomplish in the future, such as strikes against WMD facilities, discriminate urban warfare, and more-demanding peace operations. These and similar missions are likely to require capabilities not typically resident in general-purpose forces. DoD's establishment of counterterrorist teams is one example in which specialized capabilities were deemed necessary for MOOTW.

- **MOOTW are not necessarily optional.** As a general rule, U.S. interests are less engaged in MOOTW than in MRCs. To the extent that this is true, we can expect U.S. forces involved in MOOTW—particular high-value air assets, such as JSTARS, which are both vital to MRCs and easily redeployed—to be withdrawn if an MRC arises. On the other hand, if the president has committed the United States to helping in a highly visible MOOTW (e.g., peace operations in Bosnia), the political costs (i.e., in relationships with allies and in prestige and honor) associated with a precipitous departure may be much higher than is generally acknowledged and may be higher than the president would be willing to pay. Thus, planners should treat major MOOTW as serious commitments and not count on having many of the forces readily available for other uses.

- **General-purpose forces engaged in MOOTW are not prepared to accomplish MRC-level tasks.** Even if a given MOOTW commitment is considered optional, the forces deployed to it are unlikely to be immediately available for conventional warfare. Both air and ground forces deployed to recent prolonged peace operations have found that their combat skills degraded quickly

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[33]The shootdown of an Iranian airliner by the USS Vincennes, the shootdown of two U.S. Army Blackhawk helicopters by Air Force F-15s, and the shooting of unarmed Somali adolescents by U.S. servicemen in Mogadishu are three prominent cases in which a combat orientation led to tragedy in MOOTW.

during these tours. Depending on how long a ground combat unit has been deployed in a MOOTW situation, it might need months to redeploy, reequip, and retrain for conventional combat. Although air forces can redeploy far more quickly, combat skills can take from weeks to months to reacquire. Furthermore, equipment is often worn out, destroyed, or left behind (for allied use) in MOOTW and may take considerable time to replace.[34]

• **The MRC plus MOOTW strategy is the most robust.** Other chapters in this volume make the case for a force capable of winning a two-MRC strategy. We would only add that, for this two-MRC force to be viable, general-purpose forces must engage in high-quality combat training and be ready to deploy on short notice. If the total force is built with just enough units to accomplish the MRC missions and if the U.S. continues to engage in high OPTEMPO peace operations, some portion of the force will not be fully ready to accomplish MRC tasks if a war occurs. The U.S. experience over the past five years suggests that it may be necessary to add a MOOTW increment—including both combat and support elements—to any MRC force sizing exercise to determine the actual force needed both to perform peace operations and to prepare for MRCs. There are, of course, alternatives to adding force structure: relying more on host nations, private contractors, etc.; developing technologies to relieve manpower requirements; and reorganizing existing force structure to make it more readily accessible for MOOTW. Ultimately, however, it appears that, in the absence of more force structure, trade-offs of some MRC capabilities for MOOTW capabilities will be required, if MOOTW continue to be conducted while maintaining MRC readiness.

• **Develop a new approach to MOOTW.** Perhaps the most important change to be made is in how defense planners conceive of MOOTW in general and peace operations in particular. Beginning with the most senior national security officials, there is a need to look harder at how they expect the United States to

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[34]For example, Air Force Harvest Falcon and Harvest Eagle bare-base kits have been used extensively in MOOTW and currently take one year to reconstitute. As a result, the Air Force does not currently have sufficient kits available to meet MRC requirements.

benefit from a proposed peace operation and what operational tasks are essential for achieving these objectives. Given this guidance, defense planners must take a fresh look at the military forces and concepts of operation necessary to accomplish these goals, leaving behind organization tendencies and doctrinal solutions more appropriate for major wars.

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MANAGING REGIONAL SECURITY: TOWARD A NEW U.S. MILITARY POSTURE OVERSEAS

Richard L. Kugler

In recent years, the Department of Defense (DoD) has made important strides in redefining U.S. defense strategy and posture for the post–Cold War world. Changes in U.S. overseas presence have reflected this evolution. But more remains to be done before the posture of U.S. forces overseas can be said to be well-suited to the demands of the present and future.

Portions of U.S. military forces stationed abroad seem still to be oriented toward missions mostly linked to the Cold War, not the coming era. The reality is more complex, but even so, the international scene and U.S. policy are both changing rapidly. Yet the U.S. presence overseas does not seem to be responding in parallel ways. Europe, Asia, and the Persian Gulf are all headed toward new and possibly troubled futures, but no plans seem to exist to alter the U.S. military presence in these theaters to meet or, better still, head off, these challenges. If the U.S. presence overseas falls behind the times, it risks losing its relevance and reason for being. It might fail to support America's new security interests, and it might lose its support both at home and abroad.

To avoid this fate, U.S. overseas presence and policy will need to be reviewed and renewed. They should embrace a future of new assets, activities, and missions that look outward, beyond the old Cold War strategic perimeter that bears little relation to tomorrow's challenges.

This chapter uses the following definition of overseas presence:

Overseas presence is the set of U.S. military assets and activities abroad that, as a complement to power projection from the continental United States (CONUS), engages in purposeful security-management efforts on behalf of a broad spectrum of national objectives that are "strategic," that is, political, economic, and military.

As was noted in Chapter Three, U.S. forces stationed and deployed abroad in peacetime perform important functions. Chief among these are

- To prevent the coercion of allies and friends and promote a durable balance of power

- To provide opportunities for combined training with the forces of allied and friendly nations

- To increase the familiarity of U.S. forces with overseas operating environments, and provide a basic infrastructure to support the rapid deployment of U.S. forces from outside the region

- Most broadly, to provide unambiguous evidence of U.S. intent and capability to defend its interests and those of its allies.

U.S. overseas presence, then, is a means to multiple ends. Its main purpose is to help contribute to three strategic objectives that are captured in the phrase "promote, prevent, and thwart" (see Shalikashvili, 1995, p. 4). By these terms are meant:

- **Promoting** integration, cooperation, community-building, and other stabilizing developments that contribute to peaceful interstate relations

- **Preventing** destabilizing dynamics, competition, conflict, and confrontation

- **Thwarting** aggression and violence.

Overseas presence should be judged accordingly. The deployment of U.S. forces abroad is useful only if this enhances the achievement of these U.S. security goals in ways commensurate with the resources committed.

Clearly, these are jobs that need doing, and U.S. forces abroad are uniquely capable of doing them. Just as, in the words of Woody

Allen, "ninety percent of life is just showing up," there is no substitute for U.S. forces stationed and deployed in regions where important U.S. interests are at stake. For these reasons, it is essential that the U.S. posture abroad should have a clear and well-understood rationale, and that it be well-suited to the missions and challenges of the future.

The core problem facing overseas presence is the emerging gap between U.S. security interests and U.S. military posture abroad. In ways destined to grow, U.S. policy is being pulled outward to pursue regionwide security on behalf of enlarging national interests and in response to new-era dynamics. By contrast, DoD's defense forces, assets, and activities remain primarily focused on protecting local zones within those regions, not on underscoring this outward policy thrust. This situation, which applies not only to U.S. defense plans but even more to the postures of our closest allies, is a byproduct of Cold War deployment patterns and mind sets that have not yet been updated to deal with the new era.

The gap between old missions and new security challenges facing overseas presence is truly wide when the current posture is judged in relation to what lies ahead, not many years from now. The United States is still defending Western Europe, but in the future, the real security challenges for Europe will lie in East Central Europe, the Balkans, and the Mediterranean and North Africa. The United States is still defending South Korea and Japan from direct invasion, but the coming challenges will stem from China's growing power, affecting the security of Asia as a whole, from Japan to Southeast Asia. Although the United States properly is still defending Kuwait and Saudi Arabia from an Iraqi attack, a broader set of regionwide challenges may emerge, including Iran's ambitions, new anti-Western coalitions across the Middle East, and proliferation. If these new challenges (and the opportunities that may come with them) are not answered, new-era U.S. security interests could be endangered in all three regions.

DoD should start reconfiguring overseas presence away from its preoccupation with defeating large-scale aggression toward new activities: becoming a regional security manager. The principal need is not for larger forces, but for altered U.S. and allied forces that together can project influence and power outward from the old

perimeter into these new regions: not primarily to fight major wars, but to shore up regional stability, handle lesser crises, adjust to strategic surprises, and develop an insurance policy against big events. Provided our allies and coalition partners are willing to pursue military reform to help meet this need, the new global challenges are manageable. But this will be the case only if the U.S. overseas presence is realigned. The United States requires outward-looking assets of its own, and it will need to play a strong leadership role if our alliances and coalition partnerships are to reform. Some of the necessary changes in overseas presence are under way, but the process has only begun, and it does not seem to be guided by a comprehensive plan with a sense of ultimate destinations.

The exact number of forces and their geographic distribution should be determined by unfolding requirements, not by continuity for its own sake. The current deployment of about 250,000 U.S. troops abroad is not set in concrete, and the existing allocation among these three theaters is not immutable. Indeed, the future may make changes both desirable and unavoidable. For example, U.S. forces in Europe and Asia might decrease and/or change locations and composition, but increase in the Persian Gulf. Future requirements will be determined by the interaction of global security dangers, allied contributions to mutual security, and U.S. power-projection capabilities from CONUS.

WHERE WE HAVE BEEN

During the Cold War, a key element of U.S. strategy was *forward defense*. This concept underlay the deployment of nearly 480,000 troops abroad, all of them ready to wage global war on a moment's notice. *Forward defense* correctly implied that U.S. forces were stationed abroad primarily for the purpose of deterring and defending vital interests and close allies against aggression by the Soviet Union, the Warsaw Pact, and their proxies.

The end of the Cold War eradicated this rationale, but not the need for U.S. forces stationed abroad. By 1991, the United States had reduced its overseas posture to around 275,000 troops, and it created a new term, *forward presence*, which implied that sizable U.S. forces would remain in key regions but often for broader strategic purposes than old-style deterrence and defense. By suggesting not only a for-

eign location but also nearness to a source of danger, the word *forward* had a distinct security flavor. In 1993, the incoming Clinton administration replaced *forward presence* with *overseas presence.* By replacing *forward* with the less provocative word *overseas,* the new term eliminated any lingering impression that U.S. forces were deployed abroad solely in physical relation to some geopolitical dividing line between the Western alliance and outside powers. The new term thus further downgraded global threats and balance-of-power politics as the dominant rationale for the new administration's reduced presence of 250,000 troops.

In his 1996 *Annual Report* and in speeches, Secretary of Defense Perry has portrayed overseas presence as an instrument for promoting global stability, but he has spoken in firmer tones by saying that it is intended as well to help "prevent, deter, and defeat" threats to U.S. interests (Perry, 1996, p. xi). Moreover, he has pointed to a host of new-era military missions that overseas presence will be required to carry out, including peacekeeping, crisis intervention, and counterproliferation.

The *National Military Strategy* (NMS), issued in 1995 by the Chairman of the Joint Chiefs of Staff, has further embellished upon this rationale. The NMS puts forth a strategy of flexible and selective engagement. Accordingly, it articulates two key strategic concepts as guiding the U.S. defense effort: overseas presence and power projection. The two concepts, the NMS says, work together in reinforcing ways. Whereas overseas presence provides immediately available assets for dealing with regional events, power projection from CONUS provides a larger reservoir of forces that can be deployed as reinforcements in an emergency. The NMS went beyond these two concepts to lay out three associated tasks that should be performed: *peacetime engagement, deterrence and conflict prevention,* and *fight to win* (Shalikashvili, 1995, pp. 8–16). Overseas presence, it said, should be designed in concert with CONUS-based power projection to help perform all three tasks in appropriate ways.

In short, overseas presence is intended not only as a foundation for fighting regional wars, if necessary, but also to help achieve broader goals that are heavily political and strategic—goals that are pursued in peacetime, as well as in crises and wars. Indeed, the United States intends to continue deploying sizable forces in Europe and Japan

primarily for these larger purposes, for these regions are not commonly regarded as threatened by overt aggression in today's world.

For these reasons, a better term might be **overseas security management**. This term conveys a sense of the activities and purposes that are the essence of overseas presence. It does not suggest a confrontational mentality or a belief that new enemies are appearing. Yet it makes clear that the rationale for deploying U.S. forces overseas is not merely to be present, but to grapple effectively with evolving security affairs there. It does not spell out specific goals, but the word *management* suggests that these goals exist, and the word *security* points to their nature. The term's emphasis on purposeful action squares with the intent of power projection, for the two are interlocked. The term suggests that the United States will manage overseas with the defense resources stationed there, but if this effort fails, it will draw upon its power projection assets in CONUS. If the word *management* is not wanted, then an alternative phrase might be *overseas security engagement* (or more simply, *security engagement*), which at least would convey a sense of purpose. Perhaps an even better term can be created. If so, it should assemble a sense of core assets, activities, and objectives into a single, clear phrase.

A NEW FRAMEWORK FOR PLANNING

Determining the appropriate U.S. overseas posture would be far easier if the two–major regional conflict (MRC) standard could be used as the sole basis for sizing and designing it. Perhaps this standard can be used to help determine the overall size of the U.S. conventional posture. It cannot, however, be employed as a stand-alone tool to determine overseas presence. *Reductio ad absurdum*, it would result in large U.S. forces being stationed in the Persian Gulf and Korea, but nowhere else, something few security analysts would support. The core problem is that the two-MRC standard is blind to critical regions where large forces must be committed to help support U.S. interests and carry out a host of operations but where a major war does not immediately threaten. Moreover, the current two canonical MRCs could vanish overnight if Korea unifies and Saddam Hussein's regime is overthrown. Clearly, the need for a U.S. force posture capable of waging dual MRCs would not go away in such an event, for other conflicts could erupt elsewhere in the future. Neither

would the need for overseas presence go away, for the task of activist security management would remain as long as the world is still a potentially dangerous place.

Equally infeasible is the approach of reaching a politically acceptable level of troop deployments and waiting there, without a compelling strategic rationale, until the future is determined. One problem is that the need for political acceptability might result in an inadequate posture. Sooner or later, moreover, the absence of a rationale can lead to erosion of consensus for the deployment. Even if the consensus remains intact, the outcome easily can be a never-ending saga of small reductions by linear subtraction to pare expenditures. Eventually, a series of minor cuts can result in a crippling loss of important capabilities. Beyond this, DoD must not only deal with today's world but also prepare for tomorrow. Planning normally focuses five or ten years into the future. This approach may suggest what will be politically feasible some years from now, but it provides no insights on what will be needed for military and strategic purposes.

How then can overseas presence requirements and priorities be determined? No pat formula or simple algorithm will suffice. Rather, a fully elaborated strategic planning framework is needed. Properly construed, a strategic planning framework is an analytical steering mechanism that fashions a synthesis among goals, actions, and resources in ways that identify the directions to be taken not only now, but in the future as well, at least five to ten years from now.

Although overseas presence is far from the biggest item on the budgetary plate, it is not cheap in either absolute or relative terms. A reasonable estimate is that the current overseas presence costs the United States about $10–15 billion per year. (Allied contributions, discussed below, prevent the cost from being substantially higher.) This is not the cost for buying the forces themselves. Instead, it is the incremental cost for stationing existing forces at their overseas bases and for engaging in the full spectrum of unique overseas presence activities. To be sure, this is only about 5 percent of the defense budget. In many ways, it is a bargain for the big strategic payoffs gained: Among other benefits, overseas presence lessens the likelihood that expensive wars will be fought at frequent intervals. Yet, as defense

analysts know, 5 percent of an already overstretched budget is a large amount.

Financial offsets by allies significantly reduce the cost of being overseas. Japan's offset payments of about $6 billion annually, for example, make the cost of stationing forces in that country no more expensive than basing them in CONUS. Germany and other North Atlantic Treaty Organization (NATO) allies provide about $1.4 billion of offsets annually, thereby reducing the cost of basing U.S. forces in Europe. Kuwait and Saudi Arabia cover many of the costs of deploying U.S. forces on their territories. In many regions, then, the presence of U.S. forces is welcomed by host countries that increasingly have the wealth to pay for the security benefits they receive. To the extent that the trend to larger offset payments continues, the expense of overseas presence may decline, but not to the point of insignificance.

The future may be marked not only by stiff debates over priorities and resource allocation, but also by genuine confusion regarding how this complex, far-flung enterprise can be properly coordinated. Accordingly, DoD may be well-advised to create a new overseas presence program, with theater subcomponents, in the Planning, Programming, and Budgeting System. It also might benefit by establishing a coordinated, long-range program for guiding how overseas presence is to be changed for the coming era. Efforts to develop this program should depart from traditional practices by considering new forms of overseas presence, innovative force mixes, and other programmatic tradeoffs in a search for fresh and creative responses.

Thankfully, the changes ahead do not have to be made overnight. A steady, 10-year effort using innovative departures and available funds in sensible ways probably can get the job done at the pace required. Yet before priorities can be established and resources allocated in an effective way, there must be coherent strategic plans. This gives rise to two questions: Where is overseas presence now, and how should it be adjusted to meet the challenges of the coming era? We begin by assessing the current U.S. posture.

THE BASELINE—TODAY'S POSTURE

The U.S. military posture abroad today is more diverse than suggested by the single term *overseas presence*. What exists today is overseas presence in some areas, but something different in other areas. The U.S. military forces in Europe and Japan truly can be labeled as *overseas presence* in the sense that they are no longer preoccupied with threat-based planning. But these forces account for only about two-thirds of the 250,000 U.S. troops deployed abroad.

For valid reasons, the roughly 25,000 troops in the Persian Gulf are more conflict-oriented and therefore amount to *forward presence* as the Bush administration defined that term. Because their main mission is to protect the Persian Gulf oil fields and otherwise contain Iraq and Iran, they reflect threat-based planning and balance-of-power politics. Yet they do not provide forward defense in Cold War terms, for they are not sized to defend a single nearby border against the prospect of an immediate attack, and if another major war occurs *à la* the 1990–1991 conflict, they would merely act as a small vanguard for powerful reinforcements sent from CONUS.

By contrast, the U.S. forces in Korea reflect the old "forward defense" mission because they help deter and defend against the realistic prospect of a surprise attack by a well-armed enemy poised on the Republic of Korea's (ROK's) borders. Indeed, the U.S./ROK defense strategy is literally named *forward defense* because it emphasizes protecting Seoul, which is located only 25 miles from the demilitarized zone. Reinforcements from the United States would play a vital role, but the initial defense would be mounted by U.S. and ROK forces already stationed forward. Hence, today's U.S. global posture amounts to a combination of overseas presence, forward presence, and forward defense.

Irrespective of how this posture is labeled, it reflects not only current missions but also the historical legacy of the Cold War and its immediate aftermath. Efforts to change it thus far have mostly taken the form of downsizing to reach a lower but still-adequate level; a new organizing concept and philosophy has yet to be designed. This downsizing has been motivated by a strategic calculus, yet it has been pursued in mostly linear ways. The posture's internal composition bears a marked resemblance to the tri-Service mix of the Cold

War: It is a product of continuity as well as joint thinking and still-existing needs. Equally noteworthy is that *virtually all U.S. forces remain at their original Cold War locations.* Fully 100,000 troops in Europe are all stationed at bases earlier designed to defend against a Warsaw Pact attack. The 45,000 troops in Japan are also located at bases created for Cold War missions, including defense of Japan itself against a Soviet attack. Ditto Korea, where the Cold War still lingers.

The Persian Gulf posture reflects not only the 1991 war, but also the Cold War efforts of the 1980s to defend the region against a Soviet attack. This global stationing pattern partly stems from the fact that a basing network changes only slowly as funds become available and new political arrangements take shape. Yet it also reflects the only evolutionary progress that has been made at redefining requirements for the future. The looming issue is whether this posture and basing pattern represent what will be needed in the years ahead. To the extent they do so, this will be the case more by accident than by design. In all likelihood, something different will be needed. The question is: "How much different?"

The current U.S. overseas posture is dominated by the manpower levels and combat formations displayed in Table 8.1. The European posture includes two Army divisions (in reality, four brigades) based in Germany; the equivalent of 2.3 USAF fighter wings, with additional support aircraft, based in Germany, England, Italy, and Turkey; a Navy carrier battle group (CVBG), other combatants, P-3 patrol aircraft, and a battalion-sized Marine Amphibious Ready Group (ARG) in the Mediterranean. The Asian posture includes an Army division (actually, two brigades) and USAF forces (90 combat aircraft) in Korea; a Navy CVBG and other ships, a Marine division and air wing, and USAF units (102 combat aircraft) in Japan; plus small deployments on Guam and elsewhere.

The Persian Gulf posture includes a large USAF wing, including numerous support aircraft, as well as combat squadrons; a CVBG and a Marine ARG (most of the time); and four to six Army Patriot batteries. Completely lacking are large U.S. Army combat formations, but these units could be deployed from CONUS in a crisis. Virtually all Gulf forces are on "rotational" status rather than being permanently deployed, and in theory, they might be withdrawn in the event that

Table 8.1

**Current U.S. Overseas Presence: Manpower and
Major Combat Units**

	Manpower (000s)			Main Combat Units		
	Total	Army	USAF	Navy	DEs[a]	FWEs[b]	CVBGs
Europe	109	65	34	10	1.3	2.3	1
Asia	90	30	27	33	1.3	3.7	1
Persian Gulf	27	4	8	15	0.1	1.2	1
Total	226	99	69	58	2.7	7.2	3

NOTE: DoD also deploys about 50,000 military personnel in Hawaii and Alaska, including one Army division, one USAF wing, 35 naval combatants, and one Marine brigade (MEB).

[a]Division equivalent; three brigades equal one DE. Figures include Army divisions and Marine forces.

[b]Fighter wing equivalent; an FWE normally has 72 combat aircraft. The figures here include USAF and Marine aircraft.

ongoing security operations vis-à-vis Iraq are halted. Prior to the 1991 war, the United States had only naval forces, and almost no air and ground units, deployed in the Gulf.

In addition to these three theaters, about 9,000 military personnel are deployed in Central America as part of the Southern Command. The chart excludes the 10,000 or more Navy sailors aboard ships in the Mediterranean, and an equal number on ships in East Asia. When these personnel are counted, the total rises to about 250,000 troops.

In total, about 17 percent of DoD's active-duty military manpower and 25 percent of its main combat formations are stationed abroad. The vast preponderance of this strength (about 85 percent of the total) is deployed in Western Europe and Northeast Asia, the primary frontiers of Cold War. The European Command (EUCOM), Pacific Command (PACOM), and Central Command (CENTCOM), of course, are also allocated sizable CONUS-based forces that could be deployed in an emergency. During the Cold War, EUCOM had the largest allocation, but DoD plans currently envision only modest numbers of reinforcing divisions, fighter wings, and carriers because a major conflict in Europe is deemed to be implausible.

Both the Persian Gulf and Korea are envisioned as more likely theaters of conflict. Consequently, PACOM and CENTCOM are both authorized to develop plans and programs for buildups of up to six to seven Army and Marine divisions, ten USAF fighter wings, and four to five CVBGs (Aspin, 1993, p. 19). Through the vehicle of rapid reinforcement, overseas presence and power projection become interlocking parts of U.S. defense strategy. Yet the power projection component is normally available only in a major crisis. For the most part, the overseas commanders in chief (CINCs) are expected to perform their recurring missions with the forces stationed and rotating overseas, from the bases at which they are located.

Although manpower and combat forces attract the most attention, the U.S. overseas presence is made up of far more than these two components. Indeed, the entire presence is composed of five separate categories of assets and activities:

- **Command, Control, Communications, Computers, and Intelligence (C⁴I) assets.** These include command staffs, communication nets, strategic reconnaissance and other intelligence assets, and information-processing technologies. These assets provide control of operations, planning, and outreach to foreign military establishments. They also serve as the nation's eyes and ears abroad.

- **A wide spectrum of combat and support formations.** These formations include not only major combat units themselves but also their support units, as well as other, smaller operational units that often escape attention but perform important missions (e.g., Navy P-3 patrol aircraft; USAF airlift, refueling, reconnaissance, and rescue units; Army special forces teams). In important ways, these supporting units are indispensable to the operations of the combat forces.

- **Prepositioned equipment.** This includes Army POMCUS and prepositioned sets, both afloat and ashore; USAF equipment afloat and ashore; and three brigade sets of Marine equipment aboard ships. This equipment provides a basis for rapidly reinforcing the U.S. posture in all three regions with additional combat forces. Its importance has grown in recent years as DoD has endeavored to develop a better ability to respond to events in places where large U.S. forces are not stationed.

- **Military infrastructure.** This includes a reduced but still-large network of bases, reception and storage facilities, host-nation bases capable of absorbing U.S. forces, and en route facilities to allow for prompt reinforcement to distant locations. Military infrastructure is key to the effectiveness of U.S. military missions in peace, crisis, and war. Without it, U.S. forces cannot operate regardless of their size and strength. The principal problem is that most of today's infrastructure is located in old Cold War regions, thereby yielding a lack of infrastructure in areas where new operations might have to be launched.

- **Foreign military interactions (FMI).** This category refers to the outreach activities DoD conducted to establish cooperative relations with some allies and new coalition partners. It includes such activities as International Military Education and Training, Partnership for Peace, Military-to-Military Contact Programs, joint exercises and training, military visits and demonstrations, and security assistance, including sales, loans, and grants. This category is especially relevant to U.S. efforts to establish close relationships with countries that lie outside the traditional Western alliance system; U.S. forces work within NATO and other alliances, but this is not FMI. Most of FMI's subcomponents are funded in modest ways: Their costs run in the millions, not billions. The one exception is security assistance: Whereas commercial sales total about $10–20 billion annually, U.S. government loans and grants amount to about $4 billion. Nearly all of this money, however, goes to only four countries: Israel, Egypt, Greece, and Turkey. Most of it takes the form of loans that must be repaid, not grants of equipment and assets given free of charge. The result is to leave DoD without significant security assistance for helping the military establishments of many friendly countries that seek closer ties to the United States but lack the money to purchase expensive U.S. equipment.

Notwithstanding that combat forces are commonly regarded as the key to overseas presence, the importance of these other four categories cannot be overemphasized. They consume about 25 percent of the U.S. military manpower abroad, and they account for 30 to 40 percent of the incremental funds spent on overseas presence. Moreover, they play a large, if often-unnoticed, role in determining the effectiveness of overseas presence. They provide a relatively

inexpensive way to supplement U.S. combat forces and even to substitute for forces in areas where deployments are not possible. They greatly enhance U.S. strategic agility, geographic coverage, and mission performance. In quiet ways, they coexist alongside other nonmilitary instruments for advancing U.S. goals abroad (e.g., economic aid, technical assistance, trade, and diplomacy).

How adequately are these five categories being funded and otherwise given adequate resources? Adequacy lies in the eyes of the beholder, but the CINCs are one important source of interpretation. While the CINCs naturally would prefer larger forces under their direct control, for the most part they express acceptance of the existing C^4I assets, major combat forces, and support units. This does not imply that they are fully content, for they all worry about situations that could outstrip their capabilities. Yet at budget time each year, all three CINCs typically put forth calls for initiatives aimed at remedying specific deficiencies in their assigned forces, not gaining larger forces. For example, they often call for more money to fund a higher operational tempo. A typical request is for more on-station time by CVBGs and ARGs, which today are immediately available for only three-quarters of the year under most circumstances. They also ask for more training, other readiness enhancements, quality-of-life improvements, and steady modernization. The main effect would be to bolster the capabilities of the existing force posture, not enlarge upon it.

Where the CINCs are seeking more funds for an enlarged presence is in the other three categories. While their exact requirements are a subject of continuing debate in Washington, most CINCs argue that these activities are chronically underfunded in ways that result in important U.S. military needs going unsupported. Their principal call is for more spending on infrastructure and prepositioning in new areas and for more FMI, including contact programs, loans, and grants. In these areas, they would spend about 30 percent more than is now being programmed. For all three major CINCs, the total amount would be about $1 to 2 billion annually. The bottom line thus is that the current posture of 250,000 troops is basically deemed adequate by the CINCs, but although DoD's budget funds most of the other assets and activities requested by the CINCs, it does not fund all of them. The result, at least in the CINCs' eyes, is a gap between requirements and capabilities in these areas. The Pentagon

has not quarreled with this appraisal, but in the name of budget constraints and other priorities, it has chosen to keep CINC funding at the current level.

If this is the current U.S. overseas presence, how is it performing? From all indications, it is doing an excellent job of carrying out its assigned military operations and missions. But for all its importance, this is only one frame of reference, and because it narrowly focuses on military criteria that are a means to an end, it is perhaps not the most important one. The larger issue is whether overseas presence is achieving the overarching goals of U.S. national security policy and defense strategy. This higher standard includes being prepared to fight wars and carry out peace operations and crisis interventions, but it is not limited to this end. It also includes effectiveness at pursuing the broader set of peacetime strategic and political objectives that also animate U.S. policy and strategy in the key regions of Europe, Asia, and the Middle East and Persian Gulf. The following analysis suggests that *when these larger political-military objectives become the frame of reference, there are reasons for concern about the U.S. performance now and especially in the future.* Apart from the uncertain Persian Gulf, this is not the case in regions of traditional concern for U.S. overseas presence, but it is the case in outlying regions where U.S. interests are likely to grow.

A CONCEPTUAL BASIS FOR PLANNING

Exactly what are the U.S. objectives to be taken into account in evaluating overseas presence? As was noted above, the NMS puts forth two primary objectives as a guide to defense strategy: "promote stability" and "thwart aggression." It further declares that deterrence and conflict prevention are important subobjectives and contributors to the achievement of these primary objectives. This study uses a combination of the NMS and Secretary Perry's formula to put forth a similar formulation, one that has three objectives. Their titles are simple: "*promote*," "*prevent*," and "*thwart*."

By *promote* is meant the objective of promoting integration, cooperation, and other security developments that enhance interstate peace. By *prevent* is meant the objective of preventing destabilizing dynamics, military competition, political conflict, confrontation, and aggression. By *thwart* is meant the thwarting of aggression and vio-

lence, as U.S. and allied forces carry out military operations in crises and wars. In essence, this formulation retains the original NMS objectives, but borrows from Secretary Perry's formula to elevate deterrence and conflict prevention from subordinate to primary status. The reason is not only to elevate this objective's status vis-à-vis the other two but also to establish a more analytically complete spectrum for evaluating how U.S. policy and its overseas presence are performing.

This formulation puts forth an interlocking triumvirate of objectives by which the U.S. strategic performance, and that of overseas presence, can be judged. This cluster of objectives, of course, will not apply with equal emphasis everywhere. As a general rule, the United States will be deeply concerned and involved only in regions where it has either vital or important interests at stake. This has the effect of creating an outer strategic perimeter: Behind these walls, U.S. policy will be quite active, but outside them, it will be far less active. Yet this perimeter is not a constant, for it is changing in response to new-era dynamics.

In this rapidly emerging era, a major development is that U.S. interests are enlarging outward into new regions. This is the case for a host of reasons, for Western institutions and values are being adopted in many places; the world economy is expanding; and several countries in these regions are developing the capacity to affect global order. Because of deepening interdependence, moreover, developments in many once-secondary regions can now affect regions where long-standing U.S. interests are still at stake. For example, developments in Eastern Europe can affect Western Europe, and developments in Southeast Asia can affect Northeast Asia. As a result, *the United States will be compelled to adopt a broader strategic horizon than during the Cold War, for its old strategic perimeter will be pulled outward,* thereby making its primary objectives relevant to new regions.

An excellent example is Europe. During the Cold War, U.S. interests were limited to the defense of Western Europe. In today's world, NATO is preparing to enlarge into East Central Europe, and its forces have now intervened in Bosnia. The trend lines are clear: They point outward not only to the east, but also to the southeast. There, the United States and its European allies are acquiring greater security

interests in the northern Balkans, around Turkey, and, to a degree, in the oil-rich Caucasus.

The same geostrategic dynamic applies to NATO policy in the Middle East and Africa. Ten years ago, U.S. forces conducted a limited bombing strike against Libya, and more recently, they performed humanitarian assistance in Rwanda. These operations may be a forerunner of things to come. A decade from now, NATO could be conducting major security operations in the Mediterranean, the Middle East, and North Africa. This, at least, is the firm opinion of NATO countries in the southern region, and NATO headquarters is already studying how its military command structure should be altered for this purpose.

This enlargement of the U.S. strategic perimeter also will have important implications for defense planning in the Persian Gulf. To date, U.S. strategy has focused mostly on defense of the Gulf oil fields from Iraq and Iran. The problem posed by these two countries may decrease, increase, or mutate. For good or ill, nonetheless, an equally important development is that other Arab countries likely will be acquiring the resources and inclination to become more involved in Gulf security affairs and in regional affairs more broadly. The United States and its European allies will need to deal with them. Although the future is hard to predict, the past practice of viewing Europe and the Persian Gulf as separate planning endeavors seems destined to erode as time passes by. Eventually, the United States may need a new, synthesizing security concept that unites the Mediterranean, North Africa, the Greater Middle East, and the Persian Gulf into an unbroken web.

The same can be said for Asia, where the U.S. strategic perimeter also seems destined to enlarge outward. The United States was once heavily involved in Southeast Asia, but no more. For the past 20 years, U.S. security planning has focused on Northeast Asia, mainly the defense of Korea and Japan. These two countries will remain critically important, but no longer exclusively so. The great strategic arc stretching from Japan to Southeast Asia will become more important not only because this region is becoming wealthy and an energetic factor in the world economy, but also because it bridges the vital sea lanes to the oil-rich Persian Gulf. Moreover, a second great arc stretches across the Indian Ocean to the Gulf, where India and

Pakistan can affect not only local affairs and relations with China and Russia, but also Western access to Gulf oil. Because the entire Western community is acquiring a growing number of economic and strategic interests in these two potentially turbulent arcs, it will need to fashion security there. Twenty years ago, the United States started disengaging its military forces from Southeast Asia and neighboring regions. To a degree not yet determinable, the future may beckon the United States to come back, albeit in very different ways from those of the past.

This outward extension of the U.S. strategic perimeter on an almost global basis has major implications for gauging overseas presence. It means that in future years, the core U.S. objectives of promote, prevent, and thwart will need to be meaningfully pursued not only in old Cold War hot spots where vital U.S. interests are still at stake but also in a far wider expanse of different geographic regions where new interests are arising and may need safeguarding through more active involvement than now. The kinds of assets and activities needed, however, may be quite different from those that animated Cold War planning. The U.S. overseas presence will need to be adjusted accordingly.

When the contemporary U.S. overseas presence is surveyed in the context of this emerging trend, two strategic conclusions stand out:

- First, this presence is amply well-suited to continuing protection of the old Cold War perimeter.

- Second, it is not well-designed to pursue U.S. objectives outside this old perimeter, in the new regions where U.S. and Western interests are growing, and could become endangered. Indeed, the U.S. presence is scarcely present in these regions at all— either directly or "virtually" through indirect means.

The result is a bimodal U.S. strategic performance. That is, this performance is relatively high inside the old perimeter, but it is lower outside this perimeter in ways that can become worrisome if the new regions themselves start drifting into greater instability for reasons of their own.

The irreducible uncertainties regarding the future internal development and geostrategic orientation of Russia and China are sources of

concern. There is no assurance today that Russia and China will emerge as pluralistic systems broadly embracing the goals and rules of the road accepted by the Western community. Perhaps more likely is that one or both of these giants will, for an extended period, emerge as at least quasi-authoritarian countries with statist agendas and a proclivity to engage in balance-of-power geopolitics in Europe, Asia, and elsewhere.

Another reason for worry is the possibility of growing local instability in the regions themselves. If this development comes to pass, it will be because of a host of interacting factors: intensifying nationalism, other ideologies (e.g., Islamic fundamentalism), ethnicity, angry poverty, economic friction as winners and losers emerge, the reappearance of historical rivalries, proliferation, and military competition as several nations develop modern military postures. Another reason is the lack of Western alliances, collective security arrangements, and other forms of multilateral cooperation. Although the future is uncertain and the nature and extent of deterioration that might occur are unpredictable, this witches' brew of negative dynamics—absent countervailing U.S. actions—could overpower the positive, integrative forces also at work, thereby yielding a net deterioration in the geostrategic situation in each region and in U.S. security as well. This, at least, is the consensus of a large and pessimistic academic literature that has emerged in recent years, one that has helped dissipate earlier predictions of a steadily improving situation.

If this negative future evolves in the most worrisome ways, the implications are likely to manifest themselves differently from one region to the next but with serious consequences for each. East Central Europe could become an unstable zone of geopolitical rivalry among the countries there and between Germany and Russia. The Balkans and the Caucasus could become hotbeds of ethnic strife, nationalist frictions, struggles over oil, and unstable governments. North Africa and the Greater Middle East could become regions of anti-Western governments armed with modern military technology and even nuclear weapons. The Persian Gulf could witness an aggressive Iraq and Iran emerge with regional allies, facing unstable Gulf sheikdoms. In Asia, Korea and Japan might be safe from immediate invasion, but the entire Northeast Asian region could be beset by a quadrangular balance-of-power rivalry among China, Russia, Japan, and Korea. In

Southeast Asia, militarization might allow China to assert a growing presence in the region, and its arrival might be accompanied by frictions among local powers that fall victim to rivalries with each other, thereby further destabilizing the region and inviting aggressive conduct. In South Asia, rivalry between Pakistan and India could turn nuclear and increasingly unstable, or alternatively, India could emerge as a dominant power with an anti-Western agenda in mind.

Taken together, these trends amount to a collective worst case that would severely challenge U.S. and allied defense strategies and postures. The likelihood of them all unfolding in powerful ways is low. The likelihood that some of these dynamics will gather force in moderate ways, however, is much higher if concerted Western counteraction is not taken.

The key point is not that this negative downslide is inevitable, but that it could occur if the United States and its allies ignore the newly important regions outside their old Cold War defense perimeter. Realistic worry about this outcome and the damage that could be done to U.S. interests provides an important context for thinking about where the U.S. overseas presence should be headed in the coming years. The looming questions are: How should the United States act to reduce these dangers, and how can the U.S. military posture overseas best be altered to help contribute to the endeavor?

REQUIREMENTS AND PRIORITIES FOR FUTURE FORCES AND INVESTMENT PROGRAMS

Once policy objectives have been settled, the next step in creating a new strategic planning framework for overseas presence is that of assessing requirements and priorities for the future force posture and investment programs. What will the future requirements for overseas presence be? This question can best be approached by recognizing at the onset that the term "requirements" does not imply the existence of a single-point solution, below which failure is certain, and above which additional resources would be superfluous. This especially is the case in goal-based planning. Here, the requirement of forces is determined not on the basis of technical military planning factors, but on judgments regarding how overseas presence contributes to the attaining of strategic objectives. In this

arena, there is no sharp line separating success from failure, but instead varying degrees of satisfaction and dissatisfaction.

Future requirements will be determined not only by the objectives being pursued, but also by three other factors, which are variables, not constants: the degree of danger abroad and the associated risks posed to U.S. interests, the military strength of our allies and coalition partnerships, and the future nature of U.S. power projection capabilities from CONUS. As dangers rise and alternative assets decline, overseas presence requirements will grow. As dangers decline and other assets increase, these requirements will diminish. This is a core reason why the future overseas presence should be seen as capable of fluctuating. The United States may need to regularly adjust it upward, downward, or sideways as time passes and conditions change. Consequently, long-enduring continuity may be a thing of the past.

We believe that prudent U.S. defense planning will adopt the following view of the future as a basis for shaping and evaluating defense plans and capabilities: It is that of a world marked by a traditional geopolitical relationship with Russia and China, significant regional tensions in all three of the theaters where U.S. forces are deployed in large numbers today, proliferating weapons, and U.S. alliances that need reform. In this world, the United States will need a significant military presence in Europe, Asia, and the Middle East and Persian Gulf, but not necessarily the same forces as today's presence.

In these theaters, the United States will need to look beyond its current Cold War perimeter and to determine how it can project power outward so that security can be brought to entire outlying regions. The United States will need to think broadly in terms of promoting, preventing, and thwarting in these outlying regions. It will also need to think about how it can reform its alliances and coalitions. Further, it will need to think about how it can best assemble a posture that can carry out the precepts of managing normal regional security affairs, intervening decisively in big crises and wars, and preserving strategic adaptability.

If the world evolves this way, these objectives and precepts will impart a demanding set of new requirements for overseas presence to fulfill. Above all, they will rule out any wholesale withdrawal of

U.S. forces. A withdrawal of this sort would inflict great damage on global stability and U.S. interests. Disillusioned allies would become less supportive of U.S. policies; vulnerable countries outside our alliances would grow more worried; and adversaries would become emboldened. Because of the resulting pattern of actions and reactions, the global security structure could start sliding rapidly into acute instability, toward an unforeseeable outcome of the sort that only history could suggest. To avoid this risk, large U.S. forces will need to remain stationed abroad until the international system stabilizes to a high enough degree that they can safely be removed. This level of stability is unlikely to be seen anytime soon.

Being There

The U.S. posture abroad will need to include combat forces, not just command staffs, support assets, and FMI outreach programs. To be sure, the existing number of combat forces is not fixed in concrete and will be affected by political conditions in any event. Equally true, other assets can perform important missions, and to some degree, they can substitute for combat forces. Yet, combat forces play important roles for reasons of their own. As a result, there will be an immutable requirement for them.

An overseas presence completely lacking in permanently stationed combat forces can be imagined, and it should be evaluated to help illuminate the tradeoffs and consequences. One benchmark for analysis is the idea of a "virtual presence" posture composed of C^4I assets that, equipped with new technologies, provides command posts, intelligence, and information. These assets presumably would keep the United States not only on top of each regional situation, but also "dominant" in key functional areas: U.S. forces would be able to "see," process, and decide quicker and better than adversaries, and this "information dominance" could be shared with allies.

To provide an option for assembling forces in an emergency, these C^4I assets could be accompanied by a still-sizable overseas military infrastructure that would allow for prompt reinforcement from CONUS. Periodically, some combat forces might rotate overseas for brief deployments to conduct on-site field exercises, train with allies, and visit other countries. But they would then return home. Power projection from CONUS would become the sole means by which

DoD would mount military operations abroad and react to crises and wars.

This revolutionary idea rests on three propositions. First, information and decisionmaking will be hugely important in the coming years. Second, what matters is not having forces constantly present but instead the capacity to react effectively by "getting there firstest with the mostest." Third, the combination of an adequate infrastructure and growing CONUS power projection capabilities provides the ability to get there first with the most. The principal attraction of this idea is that, in theory, it could lower the cost of overseas presence while preserving adequate response capabilities with a reduced and less-controversial political profile.

Compared to the current presence of 250,000 troops and an annual cost of $15 billion, this virtual presence posture might require only 100,000 troops or less, and it might cost about $7 billion annually. But would these savings be real, or would they instead be offset by other expenses? More important, would this posture work? Would it be effective all ways that effectiveness demands?

A sober evaluation leads to the conclusion that this idea is flawed because it would provide either a less-than-adequate overseas presence or a more costly one, or both. Even taking into account the strategic leverage provided by virtual presence and the reassurance of swift CONUS-based power projection, there will still be valid cost-effective requirements for a significant number of combat forces in all three theaters. One reason is purely military. The other is political and strategic. Together, these reasons yield the conclusion that even if the overseas stationing of combat forces entails added costs, the expense will be merited by the major stream of benefits gained.

Militarily, stationed forces greatly enhance the extent to which realistic exercises can be conducted and to which training with allies can be pursued. If an important U.S. goal will be to lead our allies into an outward-looking stance, U.S. forces will need to be present to help prepare them for expeditionary missions. Rotational deployments by CONUS-based forces likely will not be adequate to foster this major innovation. Moreover, rotational deployments impose huge strains on the forces that must carry them out. A large portion of the

entire U.S. posture might become so consumed in carrying them out that operational readiness suffers.

Beyond this, a scrutinizing appraisal is needed of the proposition that swift power projection will permit effective crisis intervention and war fighting. The critical issue is timelines, for even a properly configured CONUS posture may not be all that agile. Forces stationed overseas can react quite quickly to surprise attacks and other fast-breaking crises that occur nearby or within easy reach. By definition, CONUS power projection takes longer—often significantly longer. Only air forces can deploy overseas in a matter of hours, and only if they have an adequate infrastructure awaiting them. Ground and naval forces take far longer to deploy, normally weeks and even months. The deployment of ground forces could be speeded by overseas prepositioning of equipment sets for the necessary forces. But this step would elevate costs because of the expense of buying not only storage warehouses and host-nation support but also a second set of CONUS-based equipment for the returning forces, plus bases and facilities for them. Also important, only about 85 percent of the equipment of an Army brigade can be economically prepositioned. As a result, extra strategic airlift would have to be purchased. For a full decade, the effect could be to eradicate one-half or more of the expected budget savings.

The idea of prepositioning Navy and Marine forces is even more out of the question (although expanded home-porting arrangements remain an intriguing possibility). How could DoD afford to buy the extra carriers, surface combatants, submarines, and amphibious ships the returning sailors and marines need to train and otherwise maintain operational readiness?

In summary, a full prepositioning effort involving the Army, Navy, and Marines likely would not result in savings but instead would propel the DoD budget above its current level. In exchange, the United States would be left with an overseas presence dominated by 80,000 troops in command staffs and maintenance billets, surrounded by large but silent stocks of weapons with nobody to operate them in peacetime. As a practical matter, naval forces still would have to be deployed abroad. Only air and ground forces could be true CONUS-based power-projection assets. But even if ground forces were given prepositioned equipment, large numbers of

them—especially armored and mechanized units—could be deployed only after a transportation period of some weeks: the amount of time needed to airlift personnel and equipment not stored overseas. In the interim, inadequate ground forces would be available to deal with quick-breaking crises. Forces deployed overseas, of course, might also have to be moved to the location of a crisis. But in most circumstances, they will be a few days closer to the event, perhaps enough to make a critical difference.

Whereas virtual presence falls short on military grounds, it fails by a wider margin on political and strategic grounds. The purpose of overseas presence goes beyond keeping the U.S. government informed and DoD capable of reacting to crises. The larger purpose is to carry out the precept of managing regional security affairs in normal times. The constant presence of combat forces is critical to this enterprise. *Above all, combat forces suggest a seriousness of purpose that buys major political influence among major countries everywhere.* Combat forces help achieve the "promote" objective by communicating unambiguously the United States' intention and capability to defend important interests, thus influencing the actions of allies, coalition partners, and former adversaries. Indeed, the United States would be hard pressed to preserve its current senior positions in NATO and other alliance commands if sizable combat forces were not stationed abroad. Equally important, these forces help achieve the "prevent" objective. In powerful ways, they reassure allies, signal U.S. intentions to neutral parties, and warn adversaries. Would a virtual presence posture be adequately influential in these critical ways? In all likelihood, it would not.

Also important, the direction of change can matter nearly as much as the final destination. In today's world, large overseas-deployed combat forces already exist. The act of creating a virtual presence posture thus would not be one of building new capabilities from nothing upward. Instead, it would be one of reducing an existing capability in ways that move the U.S. overseas presence onto a lower strategic plateau. This act thereby could touch off negative consequences in two ways. It could suggest reverse momentum: that the United States is not engaging, but disengaging. Equally troublesome, it could leave behind a posture that suggests not only lower military capability but also lessened political resolve to act like a superpower.

Virtual presence thus is not an all-encompassing theory for the future. Nonetheless, this idea can play an important role in the future by being manifested in a different way. It can help serve as a relatively inexpensive instrument by which the United States creates new defense capabilities in the outlying regions. It can provide intelligence, information, and decisionmaking for regions where U.S. military activity will be needed, but forces cannot be stationed full time. To the extent this study correctly judges the future, concrete measures to create this virtual presence should play a part in DoD's budget and program priorities for the coming years.

Another important conclusion about DoD's future program priorities also stands out. Ideally, the stationing of some combat and support units in the outlying regions may make sense. But this enterprise may be slowed or blocked entirely by budgetary constraints and political opposition. If so, DoD can get a great deal of added strategic mileage—beyond better C^{4}I assets—by investing in modest ways in infrastructure, prepositioning, and FMI in these regions. Some of these measures already are being pursued in all three theaters, but considerably more can be done. These measures can themselves bring about increased political influence among friends, neutrals, and adversaries. Equally important, they can help establish a greatly improved capacity for quickly projecting overseas-deployed U.S. combat forces into these regions in a crisis or war. From an alliance-building and power-projection standpoint, all three theaters present attractive investment opportunities.

Specific measures will need to be evaluated on a case-by-case basis. As a general guideline, an annual budget increase for presence of about 30 percent, or $1 to 2 billion annually, may make sense as part of the adjustments to regional postures outlined below. This increase would open the door to a host of CINC-sponsored initiatives for accelerating fund-starved FMI programs. It would also help remedy shortfalls in the existing en route infrastructure, start development of an infrastructure in new places, and permit the continued slow but steady growth in prepositioning. Also important, serious consideration should be given to increasing FMI loans, grants, and transfers of excess defense articles. If a higher ceiling is impossible, then changes should be made in how the current ceiling is allocated. The effect would be to distribute U.S. military equipment to a host of

needy but poor countries, most of which may be either new allies or cooperative partners in the outlying regions.

These often-ignored components of the U.S. posture can become key instruments by which overseas presence is improved. They offer a viable approach to enlarging overseas presence outward. They can be launched quickly, they are affordable in a period of tight budget constraints, and they often will be politically feasible if a consensus-building effort is launched. They enlarge the U.S. presence outward not by the controversial and expensive step of stationing forces in new locations but rather by developing other meaningful assets and activities there. They can bring a host of significant strategic benefits—in aiding the cause of promoting, preventing, and thwarting—in important regions where today there is almost no overseas presence at all.

Recognizing that these measures will be a focal point of future investment activity, nonetheless, leaves unresolved the central issues of how many U.S. troops should be stationed abroad and of the size and type of combat formations that should constitute the global U.S. posture. In today's world, the number of about 100,000 troops in Europe and in Asia has acquired a political life of its own. Indeed, the U.S. government has made public commitments to sustain this number in both theaters for the foreseeable future. The number of 25,000 troops in the Persian Gulf is on its way to acquiring a similar patina, even if these troops are formally labeled as temporarily on rotational duty.

As a result, many governments are coming to accept these numbers as litmus tests of U.S. strategic sincerity. Their views deserve to be taken into account, but not in a straightjacket way. These governments are mostly concerned about the quality of the U.S. strategic commitment to them, not the exact number of American troops abroad. Provided the U.S. commitment remains intact and any changes are properly explained as adjustments to the demands of a new era and not simply reactions to falling budgets, the United States has the flexibility to embrace a different level, if that step makes strategic sense.

As a general rule, the United States should strive to limit the number of troops abroad, to reduce strain on the defense budget and posture

and to encourage other countries to carry their fair shares of the load. The larger point is that troop levels should be determined by real-world strategic requirements. The starting point for serious analysis lies in recognizing that intelligent planning does not begin with a predetermined top-line number of troops and then work downward to create a posture matching this manpower level. Instead, it first determines the configuration of units that is needed and only then derives the manpower level. The proper question thus is: Given the objectives and missions identified above, what U.S. military units will be needed abroad in the future?

OUTLINES OF A FUTURE POSTURE

The current posture provides one basis for gauging the judgments that will need to be made. Of the current 250,000 troops, about 90,000 are assigned to command staffs, higher-echelon support units, and naval installations. While its own numbers are somewhat flexible, this part of the posture provides the minimum assets needed for CONUS power projection. Its continued existence therefore will remain a bare-bones requirement.

The remaining manpower is allocated to combat formations in roughly the following ways: 100,000 slots for eight Army and Marine brigades assigned to four divisions; 30,000 slots for four USAF wing-equivalents; 30,000 slots for three Navy CVBGs, three afloat Marine ARGs, and associated combatants. In the main, the question of manpower levels thus boils down to whether these formations will continue being needed in their current quantities.

Two criteria seem appropriate for shaping the future posture:

- First, commands that still face the threat of large, surprise attacks on vital interests will continue to need adequate combat forces to signal an unambiguous U.S. intent to defend, and to carry out initial operations for the period before reinforcements can arrive.

- Second, commands that no longer face this threat will need combat forces sized by different standards. They will need enough forces to carry out exercises and training with allies, to meet the spectrum of emergencies that can arise under normal conditions, and to underscore the U.S. commitment to defend

U.S. and allied interests in their regions. These standards in themselves can impart a need for sizable forces. To the extent that the third standard is judged as imposing requirements that exceed the first two standards, nonetheless, questions can rightfully be asked about the combat forces needed to send a strong signal.

In the past, the standard unit of account has normally been the Army division, the USAF wing, and the Navy CVBG. This is the case because these are the basic building blocks the three Services use to mount major operations. Modern weaponry, however, makes potent forces out of the Army brigade, the USAF squadron, and the Navy task force of missile-carrying cruisers, frigates, and amphibious assets. To the extent that these units can be portrayed as sending a powerful political signal, the political requirement for larger forces will diminish.

If these are the appropriate criteria for gauging the future, the proper conclusion is that *requirements for defending the old Cold War perimeter have already declined, and may shrink further. The need to station enough forces to project military power into the outlying regions, however, likely will have an offsetting effect,* but to an as-yet unknown degree. Accordingly, the requirement for the number of formations needed should be treated as a variable, one that plausibly could go down somewhat as threat-based planning gives way to the precept of managing normal regional security affairs.

A Changing Mix?

Regardless of the specific type and number of formations deployed, a new organizing concept may become appropriate for future postures in all three theaters. The current concept is that of fashioning seamless theater postures that are designed to carry out single, big operations (e.g., MRCs or large lesser regional conflicts). To the extent local conditions permit, a new concept may aspire to preserve this capability as a back-up insurance clause, while aspiring to create a diverse portfolio of assets for the multiple tasks of managing normal regional security affairs and being adaptable to major strategic changes.

The same judgment of flexibility and variation should be applied to assessing the internal mix of combat forces abroad. The existing mix reflects the tri-Service distribution in the overall U.S. defense posture. Yet it is ground heavy in the military personnel and budgetary resources overseas presence consumes. If opportunities for drawdowns occur, they likely will take the form of partial ground reductions. The reason is that, in general, a smaller number of brigades in Europe and Asia may be adequate for carrying out normal security management. If a dangerous world comes to be, by contrast, U.S. strategy likely will continue needing three CVBGs and three ARGs abroad most of the time. These forces provide geographic reach and operational flexibility.

The same applies, only more so, to USAF forces. More than the other Services, USAF forces can project power over long distances quite quickly. They can also perform a wide spectrum of operational missions, both continental and maritime. They thus are highly versatile instruments not only for managing regional security affairs and engaging in major crisis interventions, but also for carrying out the precept of adaptability. They have the virtue of being able to take on new missions in new areas quickly. To the extent that higher force deployments are needed in the coming years, they likely will take the form of more air forces.

This will be the case if U.S. policy and strategy endeavor to project security into outlying regions by developing an outer military infrastructure onto which U.S. forces can be projected on short notice. Accordingly, DoD should give serious consideration to the idea of developing two long strategic arcs of air bases, most of them deployment operating bases (DOBs), with interlocking zones of air coverage. The first arc would cover East Central Europe, the Balkans, the Middle East and North Africa, and end in the Persian Gulf. The second arc would be established in Asia. It would stretch from Japan and Korea southward to the western fringe of Southeast Asia. The effect would be to enhance greatly the capacity of the U.S. overseas presence quickly to deploy meaningful combat forces into outlying endangered regions.

USAF forces would largely remain stationed at their current main operating bases (MOBs) in Western Europe, the Persian Gulf, and Northeast Asia. With a network of DOBs at their disposal, each with

minimum essential staff and facilities, they could quickly redeploy to any location along these two arcs needing the intervention of U.S. forces either to resolve a crisis or to carry out initial combat operations. Some of these bases and facilities already exist or could readily be upgraded. Whether the remainder can be developed depends on a host of political considerations. In military terms, nevertheless, this approach would meet many of the most important needs of U.S. strategy.

Toward a New Regional Posture

If these general principles are deemed valid, what specific developments does the future hold for the U.S. overseas presence in the three theaters? How is reform likely to manifest itself in new defense and security policies, new U.S. and allied force structures, and new programs? The following analysis is speculative and at times prescriptive, but it may help illuminate the specific issues and trends ahead.

Europe. The U.S. presence will remain embedded in NATO but will be capable of unilateral actions when necessary. The chief policy challenge facing the United States is that of energizing EUCOM's military presence so that it can lead NATO into an era of growing outward-looking reform. The process of energizing EUCOM has begun with its participation in IFOR in Bosnia and its outreach programs in East Central Europe. The process of reforming NATO has begun with IFOR, emerging plans for structural reform, and the alliance's endorsement of eventual enlargement. These dual efforts, however, have only just begun. Comprehensive policies for the future have not yet been crafted, and ultimate destinations have not been determined. The near-term challenge is to forge these policies and destinations. The mid-term and long-term challenges will be to carry them out in the required magnitude and in a timely fashion.

Simply stated, NATO faces the task of becoming more than a primarily Article 5 alliance aimed at the collective defense of its borders; apart from Turkey, these borders are not likely to be seriously threatened in the future. As discussed earlier, NATO's future task will be that of becoming a regional security manager so that stability can be brought to East Central Europe, the Balkans, and the Middle East and North Africa.

Because NATO's members share important interests in these regions, the principal debate lies not in whether this outward focus should be adopted but instead in determining how far it should go and how quickly. Should NATO focus on Europe and its immediate periphery? Or should it extend its defense activities as far south as the Persian Gulf? Or should it become a truly global alliance, with farther-flung policies and activities?

The United States has a strategic interest in recruiting allies that can help carry its multitheater and global burdens. Most West Europeans may still prefer more limited horizons. Regardless of the horizons to be embraced, the future lies in NATO preparing for new Article 5 missions in support of enlargement and in preparing for non-Article 5 missions not through the old vehicle of ad hoc improvisation, but through formal planning and programming, new command systems, and better forces that can project power outward.

NATO's strategic reforms likely will include adoption of a new strategic concept and modest reforms to the civilian leadership structure in Brussels. Reforms also likely will include the fashioning of new military commands (MSCs and PSCs) under the Supreme Allied Commander, Europe and the Supreme Allied Commander, Atlantic that conduct planning for new missions, including non-Article 5 missions. A new force-projection command may be called for. Even in absence of this step, the act of creating NATO military forces better suited to power projection will be a key item on the agenda. This act will not involve building new combat forces but instead providing existing forces with the necessary mobility, logistics, sustainment, and outward-oriented infrastructure. These reforms likely will be accompanied by efforts to build a stronger European security and defense identity into NATO without weakening the alliance's ability to conduct collective missions under U.S. leadership.

NATO's future will partly depend upon how the European security architecture evolves: Relationships with Russia will be key. Nonetheless, some steps can be forecast with a measure of confidence. A key requirement of NATO military reform will be the crafting of a new strategy, force posture, infrastructure, and interoperability for defending new members in East Central Europe. Poland will be foremost, but other new members likely will join, and they

will need security guarantees. NATO will face the additional challenge of ensuring that the measures adopted carry out a full spectrum of new Article 5 missions, yet are transparently defensive in ways that do not suggest an offensive threat to other countries, including Russia.

Beyond defending new members in this region, NATO will be pursuing outreach programs to Ukraine and other nearby countries. These programs may go beyond Partnership for Peace as it currently is interpreted. Although NATO seems unlikely to acquire new members in the Baltics anytime soon, it likely will acquire growing security ties to several states there. The future of the Balkans is harder to forecast, but the region is volatile, and NATO's involvement in IFOR may be a forerunner of a long-term role.

Turkey likely will be the only current NATO member needing stronger Article 5 guarantees against direct *invasion*, albeit not perhaps from direct *attack*. Yet NATO's long-neglected defense posture along the entire southern region will need upgrading, for as discussed earlier, many analysts foresee security threats—including weapons of mass destruction—from North Africa emanating northward into the Mediterranean and even Southern Europe.

What does this NATO reform agenda mean for the U.S. military presence? The answer is that U.S. forces will need to be configured not only to help carry this agenda out, but also to lead it so that it takes a form supportive of U.S. interests. The current EUCOM posture of 109,000 troops, plus 10,000 or more Navy and Marine forces in the Mediterranean, provides ample manpower assets and combat forces. Yet energizing reforms are called for. Additional funds for investment in infrastructure, prepositioning, and common NATO endeavors in East Central Europe will be called for once new members join the alliance. Whether U.S. forces will eventually be stationed on East Central European soil remains to be seen. Although NATO today does not foresee any requirement to station large forces there, the future may yield small deployments for reassurance and training. U.S. forces should be part of this effort. Beyond this, U.S. leadership of NATO's outward thrust may lead to other new deployments, with some forces moving from Germany to Turkey and other locations in the southern region.

As for the composition of EUCOM's posture, no plans for major changes are currently in the works. Yet, growing emphasis on regional security management, rather than major crisis intervention and war fighting, may give rise to measures aimed at broadening EUCOM's portfolio of assets. Today's posture is mostly aimed at major combat operations. A more diverse posture of tomorrow may include trimming EUCOM's overhead structure.

The array of plausible future missions facing EUCOM suggests a shift of emphasis among its assets stationed in Europe. For example:

- Another USAF wing, perhaps a composite wing capable of multiple projection missions, would provide functionally and geographically flexible power-projection capabilities.

- Changes to USAREUR might include transforming its four heavy brigades into a new force of two heavy brigades, an MLRS operational fires regiment, an air-mobile regiment, and extra peace support units.

- EUCOM may also become more of a specialist in missions aimed at contributing to NATO's projection capabilities in such areas as C^3I and strategic mobility.

- To the extent that NATO enters the business of strategic air defense and counterproliferation, EUCOM would be a natural candidate to play a leading role.

The size of EUCOM's future posture will be affected by Europe's security and stability as a whole. Stabilizing progress will be needed to permit drawdowns, including an effective NATO enlargement, other alliance reforms, a stable Balkans, and emergence of a democratic Russia that becomes more integrated into Europe. In these events, troop withdrawals, albeit not complete disengagement, may become feasible.

The Greater Middle East. Forecasting CENTCOM's future is far harder because of the Persian Gulf's volatility and that of the Greater Middle East as a whole. In the near term, emphasis will continue to be placed on deterring aggression by Iraq or Iran, plus carrying out ongoing Gulf security operations and crisis interventions. The vulnerability of Kuwait to a short-warning attack suggests the need for a

full-time U.S. troop presence of brigade size, even if specific units are deployed on a rotational basis.

In the middle and long terms, worry about a major war may intensify as Iraq and Iran become more assertive. A broader range of CENTCOM defense operations may need to be planned, including counter proliferation operations aimed at dealing with weapons of mass destruction. In this event, CENTCOM's posture of necessity will continue being primarily driven by threat-based planning, but with a focus on a wider spectrum of major wars than now. Regional security activities will take a back seat to this enterprise. Any efforts aimed at reconfiguring CENTCOM's overseas presence will be subordinated to major war fighting. Alternatively, the threat of another big Gulf war may lose urgency because of future changes in Iraqi and Iranian policy. In this case, more-focused efforts can be launched to retailor CENTCOM's posture to become a regional security manager, while preserving power projection forces in CONUS that can deal with major crisis interventions and war fighting.

For the near term, a principal issue will be whether the U.S. forces now temporarily deployed in the Gulf are to become permanent fixtures. If the political situation permits, a strategic case can be made for this path-breaking step. In addition to the risk of another surprise Iraqi aggression, the Gulf arguably is too important to vital U.S. and Western interests to be without a serious, permanent U.S. presence. If currently deployed U.S. Army and USAF forces are withdrawn, this will leave only afloat U.S. Navy forces in the vicinity, and their operational tempo is threatened by funding constraints. The forces of Saudi Arabia and other Gulf sheikdoms are not capable of defending their borders against large-scale aggression. They will be left reliant on a U.S. ground and air presence that will be provided only through CONUS power projection and that normally can be activated only in an emergency. A permanent U.S. presence would help alleviate these problems.

What kind of permanent posture should be developed to fight seriously in the initial stages of a quick-breaking big war? A Navy CVBG, a Marine ARG, and specialized mine-sweeping assets, all with nearby bases and facilities, would be one building block. Another building block would be a USAF composite wing, with capabilities for air superiority, deep strike, interdiction, defense suppression, and close

support missions. Ground forces should include air defense units with Patriot batteries. In addition, a U.S. Army brigade or, better, an armored cavalry regiment stationed in Kuwait would significantly enhance initial response capability and reduce the possibility of a short-warning attack. This regiment should possess ample firepower and maneuver. It thus should be composed of a combination of tanks, infantry fighting vehicles, attack helicopters, artillery, and MLRS. Key enabling capabilities, including reconnaissance platforms, assessment facilities, command and control assets, and stocks of advanced munitions are also essential. These systems can be deployed in the Gulf to give this joint posture an impressive capacity to deliver long-range, accurate firepower over a wide area.

A posture of this type could also perform the role of regional security manager if the threat of a big war mutates. The Army component, however, might be adjusted to become less heavy and more capable of diverse operations, including outward deployment and peace-keeping. Manpower requirements for a war-fighting posture or its security-manager variant would be determined by the assigned combat forces and their immediate support units, a command staff and headquarters, and sufficient personnel to operate bases, prepo-sitioned equipment, war reserve material stocks, and reception facilities.

Total manpower likely would be in the vicinity of 40,000 troops, counting afloat personnel. Permanent installations would have to be developed, based on the willingness of the various Gulf countries to host these forces. The feasibility of this permanent posture depends upon a favorable attitude emerging not only among the Gulf sheik-doms but also among other pro-Western Arab countries wanting a U.S. presence capable of influencing security affairs not only in the Gulf but also in the wider region. Whether this attitude emerges remains to be seen, but the strategic requirements for a permanent U.S. presence in the Gulf are becoming manifest as the region becomes more dangerous because of old antagonisms and new weapons.

To the extent that a permanently deployed CENTCOM posture is free to look outward, its strategic goal should be focused on the task of building a wide coalition of friendly countries that are capable of exerting positive political influence and contributing significant

forces to regional missions. Outside the Gulf itself, obvious candidates are Egypt and Jordan. Sudan and Ethiopia are appropriate candidates in geostrategic terms, but only if their internal politics evolve in pro-Western directions. In the long term, Israel may be able to play an active role if the Arab-Israeli conflict is finally settled. An active role by Israel, in turn, could help pave the way for Turkey to help assist U.S. policy in more ways than it does now.

The idea of assembling this type of coalition, of course, is not new. Indeed, it began taking shape during the 1991 Gulf War. Since then, U.S. defense activities with many of these countries have been growing in quiet ways. The initial steps have already been taken toward establishing cooperative defense ties with these countries during peacetime. These steps include exercises, training, other FMI activities, and some prepositioning of U.S. equipment. The future issues are the pace and scope of cooperation, the degree to which U.S. military assets and infrastructure can be placed on their soil, and whether U.S. military activities there can become a regular feature. Recent progress in the Arab-Israeli peace process may be opening the door to a broader and deeper relationship.[1] This especially will be the case if militant fundamentalism fades to the point where the relevant governments are no longer impeded by domestic politics from developing close defense and security ties to the United States, its regional strategy, and its overseas presence in the Gulf.

East Asia. Should the U.S. develop a new military posture in Asia? This question may be the most important to address, for the changes ahead in this region may be the greatest of all. For so long as the Peoples Republic of Korea poses a serious and immediate military menace to the ROK, PACOM defense plans and programs will focus on the Korean peninsula, while viewing the U.S. posture in Japan in similar threat-based terms. Yet the likelihood that North Korean military capabilities either will erode or collapse altogether in the next few years elevates the importance of thinking about the new era's defense requirements in Asia. As discussed earlier, new-era security affairs in Asia likely will focus on regional management not only in Northeast Asia but in Southeast Asia as well. Planning there-

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[1]For a broad-brush assessment of the potential military benefits of an Arab-Israeli peace settlement, see Khalilzad et al. (1997).

fore should intensify its focus on the issue of how the U.S. force posture in Asia should be adjusted. What new force deployments will be needed? What program priorities should accompany the shaping of this posture? These questions too will need answering, and perhaps soon.

The end of worry about a Korean MRC will mean that a U.S. posture primed for immediate, big combat operations on the peninsula will no longer be appropriate. The new requirement will be for an altered posture that can carry out wide-area regional operations over vast distances. The new posture will also need to become an instrument by which Asian alliances and coalitions can be formed not only to provide local security but also to Joint U.S. forces in projecting power outward into adjoining and distant zones. The type of U.S. posture needed for these purposes will be a Joint posture. But it likely will be composed of a quite different mix from today's. Currently, large ground forces dominate the U.S. posture in Northeast Asia. In the new posture, ground forces likely will play a less-central role. Air forces and naval forces will be the principal instruments of choice as the U.S. presence in Asia becomes a regional security manager.

How many ground forces will be needed? The DoD will need to address this question, but a reasonable estimate is that, although PACOM will require some ground forces, it will not need the nearly two divisions (Army and Marine) stationed in Korea and Japan today. Regionwide security concerns will become the basis for determining a new ground force requirement. A redesigned posture might take the form of two brigades: one Army brigade and one Marine MEB with an attached Marine air squadron. These two brigades could be accompanied by prepositioned assets for an additional two brigades, or even the four brigades needed to redeploy two full divisions in a hurry.

The purpose of the deployed forces would be to provide assurances to Korea and Japan, as well as to provide a basis for combined training, while focusing primarily on regional peacekeeping and projection missions. Where would these two brigades and this equipment be based? One alternative is to base the Army brigade in Korea, at a southern location near a seaport. Meanwhile, the Marine brigade could be based on Okinawa, in current facilities. A second alternative is more radical. It would base both brigades—Army and

Marine—in Korea. New bases and installations there could be designed to support a power-projection strategy and to work not only with Korea but also with Japan and other countries, to develop common doctrine and interoperability for new missions.

How many naval and air forces will be needed? U.S. Navy forces likely would remain as today, with a CVBG home ported in Japan and other task forces available as appropriate. A Marine ARG would still be deployed, but its manpower might deploy to prepositioned equipment and staging facilities in Hawaii.

USAF forces, in turn, would be realigned to make better use of the three wing-equivalents now assigned to PACOM in Korea and Japan. These assets currently include 54 F-15 C/D, 120 F-16, 18 A-10, 2 E-3 AWACS, 15 KC-135, 25 C-130, and other aircraft. An illustrative design standard for a realigned air posture might be as follows: First, a USAF composite wing of 54 aircraft could be stationed in Korea. It would be composed of F-15s, F-16s, and A-10s. Its mission would be to perform residual defense missions in Korea and, more important, to prepare for combined regional security operations. Second, a full wing of F-15s and F-16s (72 aircraft) would be stationed on the Japanese mainland, at Misawa Air Base. Third, a full composite wing of long-range F-15Cs and F-15Es would be stationed on Okinawa, at Kadena, along with AWACS and tanker aircraft. Finally, long-range heavy bombers should be included in the mix, perhaps stationed at Anderson AFB in Guam.

Under this option, PACOM's new posture in East Asia thus would take the form of two ground brigades, three USAF wings (plus bombers and support aircraft), a Navy CVBG, a Marine ARG, and other supporting units. Compared to the current manpower of 100,000, the new posture would total about 85,000 slots. The Korea deployment would shrink from 36,000 troops to about 22,000 if only one brigade is stationed there, or to about 33,000 if two brigades are stationed. Deployments in Okinawa would decline, with the amount depending upon the force that remains. If one Marine brigade remains, the current level of 27,000 troops would decline to 17,000. If both brigades leave, the new deployment would be about 7,000, mostly USAF personnel. Deployments in all of Japan, counting Okinawa, would drop from 45,000 today to 25,000 to 36,000 troops. About 10,000 to 15,000 Navy personnel would remain afloat. Another

7,000 uniformed personnel would remain on Guam, and 5,000 would be deployed elsewhere, including at new air installations in Southeast Asia.

The development of a renewed U.S. military infrastructure in Southeast Asia would be a goal of plans and programs for the new PACOM posture. U.S. naval forces would continue to have their current responsibilities for this region. The centerpiece of a new infrastructure would be the above-mentioned network of USAF air bases. This network would be anchored in three USAF MOBs in Japan, Okinawa, and Korea. These MOBs would provide an integrated combat radius covering Northeast Asia to as far south as Taiwan. To extend this Asian air security belt southward, in the form of near-continuous coverage, USAF DOBs could be established in the Philippines, Thailand, Singapore, Malaysia, Indonesia, and ultimately, perhaps, Vietnam. This long belt of DOBs would enable USAF forces to redeploy from their northern MOBs and thereby to project significant air power in a matter of hours along the 3,000-mile arc stretching from Okinawa to Thailand. Manpower requirements for this air belt would be determined by the personnel needed to keep DOBs in "warm status" (i.e., not immediately operational, but capable of reaching this status quickly).

The net effect would be a new U.S. defense posture for the Pacific and Asia. It would be smaller than today by about 15 percent. It would be redistributed. In particular, fewer U.S. troops would be stationed in Okinawa, where the current presence is controversial. This posture would be able to perform residual border defense missions in Korea and Japan. Its main capability and orientation, however, would be to function as a regional security manager through power projection. It could act unilaterally, but its primary purposes would be to develop multilateral forces for this mission and to foster other cooperative relationships. It would have enough Army and Marine forces for normal missions, plus the capability to draw upon prompt reinforcements from CONUS in an emergency. It would have the current, adequate level of naval forces. It would have a somewhat larger land-based air force component, realigned in ways that can rapidly project air power southward, where redeployed USAF forces could perform crisis missions until reinforcements could converge on the scene. The result would be an outward-looking, multilateralist, joint posture for the Asian era ahead.

CONCLUSION

This chapter has aimed to say useful things about the basics. It is the basics—the underlying reasons—that must be thought about if overseas presence is to be steered toward the demands of a new era. The U.S. military presence overseas deserves to survive in robust form because it will be needed to help deal with the dangerous world that seemingly lies ahead. At the moment, however, U.S. overseas presence lacks a convincing rationale because the traditional threats facing it are going away. Overseas presence needs a compelling new sense of purpose and a new posture to go along with it.

Overseas presence needs to embrace goal-based planning. Further, it needs to shift emphasis away from fighting big wars to becoming a regional security manager and a strategic adapter. It should focus its efforts on projecting U.S. and, increasingly, allied military power and security beyond the old Cold War perimeter and into newly important regions where U.S. interests will be endangered. There, it needs to promote, prevent, and thwart. To carry out this new purpose, overseas presence will need to reform. It will need to fashion new force structures, new assets, and new activities. These may be very different from those of the past.

Hence, planning for overseas presence should not be done in linear ways. Instead, it should be imaginative and creative. It should consider new ways of doing business. The act of deciding upon these new ways and determining the new posture that can best carry them out will be exciting but hard. It therefore will require serious analysis. This analysis should be done before DoD starts negotiating the future without a comprehensive design.

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WHAT CAN LIKELY DEFENSE BUDGETS SUSTAIN?

David S. C. Chu

INTRODUCTION

Understanding what forces might look like under reasonable assumptions about future defense budgets remains one of the enduring questions of defense planning and of the debate over appropriate future strategy. Of course, the purist would argue that strategy comes first, and this chapter briefly discusses that issue before it attempts to provide a budget-constrained forecast of where the United States military forces may be headed. The forecast provided here is based on an analysis of the recent relationship between U.S. defense budgets and military forces. The analysis argues that sustainable forces are likely to be much smaller than those now planned (at least as measured by traditional metrics—e.g., the numbers of personnel on active service, or the number of classic organizational units). Given that forecast, this chapter concludes with a brief discussion of the tradeoffs that might be considered to produce a different result.

BUDGET OR STRATEGY—WHICH COMES FIRST?

It is a truism of strategic planning that one should begin with objectives, from them deduce a proposed defense program, then calculate the required budget as a final step. The reality, of course, is quite different: While military planners may influence the long-term budget level by identifying objectives that must be met, in the short and

intermediate terms they are usually constrained by an arbitrary figure imposed by the political process.

Besides the reality of the political process, a second important factor hinders the debate over what the level of defense spending should be. That is the lack of an agreed-upon model that would translate strategies into capital and operating budgets for the Department of Defense (DoD), on either a steady-state basis or (more usefully) in terms of budgets for the immediate planning period. DoD has a *process* for producing such estimates—the programming phase of the Planning, Programming, and Budgeting System (PPBS). But there is no single model that will take objectives (or even force structure plans) and translate them into a set of budgetary estimates.

Such a gap is not surprising in view of the complexity of military operations and the DoD itself. Moreover, such a model would have to assume that DoD operating practices are fixed, and that the equipment and other capital implications of choosing one objective over another are well understood. Neither is true, and imposing such assumptions on the process would ignore the importance of innovation in operating practices and of new capital items in reducing the cost of meeting any objective.

There are, of course, many partial estimating models that attempt to forecast pieces of the budgetary requirements associated with an objective. Military departments and government agencies use some of these in formulating Program Objectives Memoranda—proposals to the secretary of defense in the programming phase of PPBS regarding what the departments and agencies believe is needed to meet the objectives he has promulgated. And the DoD has commissioned extensive research to help it understand better the factors that most importantly affect operating costs and those that underlie the cost of major weapon systems.[1] Such models can be helpful to the DoD's continual planning processes, but because they are incomplete, they cannot be used easily to produce a "bottom line."

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[1]See, for example, Larson and Palmer (1994) and Drezner et al. (1993).

THE LIMITS OF HISTORY

Even if the available models more completely described the cost relationships underlying DoD budgets, they might not necessarily provide a good guide to the future resource levels that present plans will require or a basis for analyzing what kind of force a given budget can sustain. The difficulty lies in estimating the parameters of the models. Virtually all the budget-estimating models derive their parameters from historical data, especially data from the "Historical FYDP."[2] One of the principal lessons of history—albeit one about which there is much debate[3]—is that a first-rate military is expensive. At various times in the Cold War, the United States chose to skimp on some elements of a first-rate military—whether in the readiness levels of the 1950s or those of the 1970s, or the personnel quality of the early All-Volunteer Force. Thus, the answer to "How much budget is enough?" cannot be answered simply by looking at the historical data, however frequently political commentators attempt to do so. Neither is it wise to accept the estimated parameters of cost models without inquiring carefully about the underlying reality they reflect.

In addition to the problems for costing created by "different militaries," there is the additional problem that the DoD budget commingles capital and operating costs. If investment were kept at a steady level despite the changing winds of political fortune, this would be a less serious problem. But such is not the historical case: The DoD's history is characterized by investment "booms" and "busts," which distort the total budget figures in any given year— worse, often for several years in a row. Thus, for example, there was a substantial buildup of conventional investment in the Kennedy administration (*before* the Vietnam War), which is reflected in the aircraft carriers and amphibious ships built in that era and just now

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[2]The FYDP, or Future Years Defense Program (as it is now known), records the decisions of the secretary of defense and the president on the future allocation of DoD resources to be reflected in Presidential Budget Requests to the Congress. These decisions are tracked by 11 major force programs (see Table 9.2). The actual congressional appropriations and their use are tracked in the same 11 programs and recorded in the Historical FYDP.

[3]For a contrary view, see Korb (1995) and a typical *New York Times* editorial, "Wasteful Weapons Spending" (1996).

going out of service, creating a block obsolescence "echo" of demands for new platforms. In contrast, DoD partly financed the Vietnam War by suppressing investment in certain classes of equipment—at the nadir, for example, just three new ships were authorized in FY69.

Notwithstanding its limits, however, history is a good starting point from which to understand the future, if we are careful in its use. Historical budget data can help us understand why the current military costs what it does and may even help identify future budgetary problems. In the present instance, a principal problem is the need for recapitalization funds—funds with which to buy the next generation of equipment, to replace the weapon systems with which American military units are now equipped. Much of that equipment will reach the end of its service life in the first quarter of the 21st century.

DoD'S RECENT BUDGETARY HISTORY

Tables 9.1 and 9.2 summarize the DoD's recent budgetary history, using benchmark years. FY80 is the last budget reflecting purely the priorities of President Carter's administration (since the Reagan administration sought a substantial supplemental for the FY81 budget), while FY85 reflects the peak of defense budget authority during what is often loosely termed the "Reagan defense buildup."[4] FY89 is

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[4]The actual history is more complex than the use of simple benchmark dates comparing the Carter and Reagan records might suggest. The roots of the debate over the appropriate level of defense spending in the late 1970s go back to the beginning of the decade. During the Ford administration, defense officials began pushing for an increase in the real level of the defense budget, following the sharp decline in defense spending that paralleled the U.S. withdrawal from Vietnam, and President Ford bequeathed to President Carter an ambitious defense plan. While President Carter trimmed back that plan, it was during his administration that the United States committed to 3-percent real growth in defense spending as a NATO goal, as part of a general strengthening of the West's defenses. At the same time, however, the Carter administration limited the effect of its commitment, principally by keeping a tight lid on pay increases, with adverse effects on recruiting and retention. Indeed, toward the end of the Carter administration, the Congress signaled that it felt a 5-percent rate of real growth was the more appropriate target and insisted that the president forward a budget consistent with that figure. At the same time, Congress began to override his pay recommendations and to mandate minimum quality standards for recruits. It is not surprising that, in these circumstances, the level of defense spending and its effectiveness became significant issues in the 1980 presidential campaign.

Table 9.1

DoD Budget Authority by Title (FY97 $B)

	FY80[a]	FY85	FY89	FY96[b]	FY97[b]
Military personnel	92.3	97.3	98.8	71.6	69.8
Operations and maintenance	80.3	110.7	108.5	95.8	89.2
Procurement	62.8	134.3	95.7	43.2	38.9
RDT&E	24.2	44.1	46.1	35.7	34.7
Military construction	3.9	7.8	7.0	7.1	5.3
Family housing	2.7	4.0	4.0	4.4	3.9
Total[c]	267.4	404.7	360.4	258.1	242.6

SOURCE: Office of the Under Secretary of Defense (Comptroller), National Defense Budget Estimates for FY1997, April 1996, pp. 88–89.

[a]Not strictly comparable with later years because of treatment of retired pay.

[b]Not strictly comparable with earlier years because of the creation of the Defense Business Operations Fund (DBOF).

[c]Including accounts not shown.

the last budget unaffected by the breakup of the Soviet empire and the end of the Cold War, while FY96 is the last enacted budget for which the DoD has published detailed data at the time of this writing, with FY97 reflecting President Clinton's request for the current fiscal year, increased by the Congress by $11 billion (principally for procurement). Note that the bottom-line figures in Tables 9.1 and 9.2 differ, because Table 9.1 is expressed in terms of budget authority, and Table 9.2 in terms of total obligational authority. Table 9.1 portrays the budget in terms of what is bought (objects of expenditure), while Table 9.2 summarizes the budget in terms of the 11 major force programs (i.e., in terms that give some feeling for the "outputs" of the defense budget). Both tables are in dollars of constant FY97 purchasing power.

Tables 9.1 and 9.2 make three important points about the DoD's recent budgetary history. First, following the extraordinary peacetime buildup of defense spending in the Reagan administration, the end of the Cold War brought an equally extraordinary reduction in

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Table 9.2

DoD TOA by Program (FY97 $B)

	FY80[a]	FY85	FY89[b]	FY96[c]	FY97[c]
Strategic	19.9	36.2	26.2	7.7	6.3
General Purpose	98.8	162.8	138.7	92.4	85.4
Intel/Comm	16.8	35.1	36.6	30.8	30.8
Airlift/Sealift	4.2	9.5	6.7	11.0	10.0
Guard/Reserve	16.3	20.7	21.3	20.2	18.1
R&D	21.2	33.6	35.6	26.2	24.1
Central Supply/Main	26.8	34.2	33.1	17.4	16.1
Tng/med/other	56.3	48.4	49.4	44.5	42.4
Administration	4.8	8.4	8.5	6.9	6.7
Support to others	1.2	0.8	1.3	1.0	1.0
SOF	NA	NA	3.9	3.3	3.1
Undistributed	NA	NA	NA	–0.6	NIL
Total	266.3	389.9	361.2	260.9	244.0

SOURCE: Office of the Under Secretary of Defense (Comptroller), National Defense Budget Estimates for FY1997, April 1996, p. 71.

[a]Not strictly comparable with later years because of changed treatment of retired pay.

[b]Not strictly comparable with earlier years because of the creation of Program 11 for the Special Operations Forces (SOF).

[c]Not strictly comparable with earlier years because of the creation of Program 11 (SOF) and the DBOF.

defense spending.[5] Through FY96, defense budget authority has been cut 35 percent in real terms since its FY85 peak.

Second, although important reductions in the size of the active and reserve forces have been made (reflected in lower budgets for military personnel and operations and maintenance, Table 9.1), the bulk of the reduction has been achieved by taking a "procurement holiday." Of the $146 billion reduction in defense budget authority between FY85 and FY96, $95 billion has come from the procurement

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[5]In fact, the pressure of other demands on the federal budget began a significant reduction in defense spending several years before the Soviet empire began to collapse; how much further that reduction might have gone had the Soviet empire endured is, of course, purely speculative.

accounts. The result is an FY96 procurement budget that is one-third lower than in FY80.

This is not a surprising short-term result. There is sufficient equipment in the inventory to sustain the force structure for a period against the depredation of accidents and time, without substantial new procurement: The active force structure has been reduced by one third or more since 1990 (depending on the measure used), and defense budgets in the 1980s emphasized procurement. In essence, the equipment bought for the larger planned structure can now sustain the needs of the present structure, until these "extra" items themselves are lost or wear out. While the dates at which this holiday must end vary by mission area and particular type of equipment, as a generalization, much of the "recapitalization" demands that DoD will face do not occur until the early years of the 21st century. Of course, having equipment ready by then implies that manufacture must begin several years earlier and the development of these items earlier still.

A third important observation can be deduced from Table 9.2: Almost all the reduction in defense Total Obligated Authority (TOA) has come from what might be called the traditional "pointed end of the stick"—the strategic force and general-purpose force programs. Indeed, the actual reduction is even greater than Table 9.2 suggests, because the decision to move a variety of expenses from other programs (principally from Central Supply and Maintenance) to the Defense Business Operations Fund places a further burden of at least $5 billion per year on the operating elements of DoD (principally the forces subsumed in the strategic and general-purpose force programs) (Wilson et al., 1996, p. IV-2). These forces must now buy services that they used to receive "free" from, among others, the central supply and maintenance program, using funds from their operations and maintenance accounts.

WHAT MIGHT FUTURE DEFENSE BUDGETS LOOK LIKE, AND WHAT MIGHT THEY SUSTAIN?

To a striking degree, the 104th Congress and President Clinton agreed on the likely intermediate-term budget limits for defense, although this was hidden by disagreement on the short-run budget

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level, with the Congress seeking about $10 billion a year more than the president did in FY96 and FY97. But by the start of the 21st century, the two parties are remarkably close—with the president, in fact, promising a budget for defense slightly higher than that Congress envisaged in its most recent budget resolution (Table 9.3).[6]

Even the levels forecast for FY01 may be difficult to achieve. Both the president's and the Congress' balanced-budget projections assume significant reductions in the real level of so-called discretionary federal spending outside defense, and they both assume some reduction in entitlement spending relative to current policy. From the perspective of recent federal budgetary history, these would be extraordinary achievements. Both the 1990 and 1993 budget-balancing packages achieved their goals in a very different way—principally through a combination of tax increases and defense spending cuts. Indeed, the 1990 budget balancing package included a substantial real *increase* in nondefense discretionary spending to secure the support of Appropriations Committee members.[7]

Table 9.3

Future Trajectories for DoD BA (FY97 $B)

	FY97	FY98	FY99	FY00	FY01	FY02
CY96 Budget Resolution (050)	267.2	269.0	271.7	274.4	277.2	280.1
CY96 President's Budget (051)	242.6	248.1	254.2	261.6	269.6	276.6

SOURCE: Author's calculations from nominal projections.

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[6]Table 9.3 provides the two somewhat different series that the president and Congress produce as forecasts of the defense budget each intends to support. The president provides figures for the DoD military budget (budget function 051) as part of his request, while the Congress provides figures for national defense (budget function 050) in the congressional budget resolution. The latter is composed of budget function 051, as well as the budget functions that embrace the military activities of the Department of Energy and miscellaneous military functions in other agencies (e.g., Selective Service), and typically runs about $10 billion more than function 051.

[7]Senator Joseph Lieberman, for example, warned in early 1996 that the budget-balancing plans and the defense top-line projection are politically inconsistent (see his comments, as quoted by Gildea, 1996, p.201).

Moreover, the longer-term picture is no brighter for defense. The broad history of the federal budget since the 1950s is one in which a reduction in the burden of defense spending (relative to gross domestic product) has been balanced by the growth in entitlement spending, with the result that the overall burden of federal spending has been roughly constant.[8] Standard projections indicate that entitlement spending—absent changes for which there is currently little political support—will continue to grow in the first quarter of the 21st century. Both political parties are implicitly promising no net increase in the burden of federal taxation—and perhaps even some reduction. The implication for defense spending of these combined factors is obvious.

Future defense budgets must sustain ambitious objectives if present practices are continued. Consistent with the standards achieved since the early 1980s, the DoD seeks enlisted recruits of high quality—that over 90 percent have a high school diploma (perhaps 10 percentage points above the rate of high school graduation in the population at large), with the majority scoring "above average" on the Armed Forces Qualification Test. Moreover, the DoD seeks to retain a high percentage of these recruits when their first term of service ends, with the goal that many will remain for 20 years or longer. Consistent with the standards of the last generation, officers are expected to be college graduates (and, increasingly, to earn a Masters degree during their careers).

Chastened still by the adverse experience of the 1970s and reinforced by the positive experience of the last decade, the DoD also continues to seek high levels of "readiness."[9] Readiness embraces the degree to

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[8]For a review of U.S. budgetary trends, see Dawson and Stan (1995).

[9]In contrast to the general support for the high level of personnel quality, a number of observers question whether DoD should maintain the level of readiness that it now sustains (e.g., McCain, 1996). Of course, not all units are actually maintained at the same level of readiness. Reserve units generally are not viewed as being as ready as active units, and a spirited debate continues about how long it takes to bring certain types of reserve units to active levels, especially Army maneuver units. Even in the active Army, not all units are maintained at the same readiness level: The Army has long maintained units stationed overseas at higher levels of personnel fill than those stationed in the United States and, among those in the United States, has favored units slated for early deployment. The Navy and Marine Corps also favor deployed units in their readiness efforts, with units slated to deploy given additional training in preparation and those returning from deployment viewed as having earned some rest.

which units actually have the personnel and equipment to which they are entitled by their organizational plans (e.g., Tables of Organization and Equipment in the case of the Army), both in quantity and in quality (e.g., the personnel are properly trained in the skills for the billet they are filling). Readiness also embraces the condition of the equipment, especially its ability to carry out mission tasks. And when commentators call for high "readiness," they often subsume in that term what might more precisely be called sustainability: that is, the adequacy of the stocks of munitions and spare parts to support sustained combat operations.

At the same time, DoD planners continue to aim for high levels of equipment capability in the new items being bought to replace those that are wearing out. Whether it is the F-22 or the new attack submarine (or even lesser items, like the Armored Treatment and Transport Vehicle, the 30-ton replacement for the venerable ambulance), the new equipment is substantially more capable than the items being replaced—and more expensive. If the new replaces the old on less than a one-for-one basis, overall capital costs may be kept even—but this is rarely the case.

Thus the upward pressures on defense costs are substantial, whether they are the costs needed to keep real compensation in line with developments in the civil sector, to maintain personnel quality; the costs needed to realize the full capability potential of new equipment in the numbers desired; or even the derivative costs of operation consistent with that new equipment ("readiness"). Add to those pressures the need to "recapitalize" the department and to modernize its equipment, and there is a serious question whether it is possible to retain an active force at approximately two-thirds of Cold War levels—the so-called "Bottom-Up Review" force.

Indeed, the administration itself, in figures now widely publicized, estimates that "recapitalization" and modernization will require $60 billion per year in procurement in dollars of today's purchasing power. Yet procurement requests in the president's budget have been struggling to stay above $40 billion, and even the recent substantial congressional additions have left the procurement account well short of the mark. It is this disconnect that led the administration a couple of years ago to begin planning for modest growth in the overall budgetary top line for defense, with the balance of the funds

(in fact, most of the needed funds) to come from internal economies generated by improved DoD management.

Whether these increases come to pass and whether the management efficiencies are achieved are issues of history yet to be written. But the past history of DoD budgets argues that unpleasant "surprises" are routine—whether the surprise is an unbudgeted deployment (e.g., Bosnia), the (normal) growth in weapon-system costs relative to early estimates, or the delayed realization of savings from management initiatives.[10] Thus it is unlikely in the near term that the recapitalization "wedge" can be achieved (quite apart from the question of whether it will actually be sufficient to sustain DoD's recapitalization and modernization needs). If that wedge cannot be achieved, the integrity of planned force structure is threatened. And a number of other factors add substantially to that pessimistic forecast and make it challenging to sustain the presently planned structure over the long term—at least with the standards of personnel and equipment quality and unit readiness to which the DoD now holds itself.

WHY WILL IT BE SO DIFFICULT TO MAKE EVERYTHING FIT?

Three principal factors explain the severity of the challenge DoD faces.

First, the real costs of personnel will continue to rise; for military personnel, the government's forecasting methodology does not fully reflect the likely extent of real cost increases. That methodology focuses on explicit pay increases; it does not take into account benefits paid in kind. In the recent past, for example, medical costs have far outstripped the rate of explicit pay raises. New pressure looms in the cost of housing: The DoD faces heavy bills to rehabilitate and upgrade its housing stock.

Moreover, in the last 15 years, DoD has been fortunate in its ability to restrict explicit pay raises to rates below that of general increases in

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[10]For a pessimistic view of the prospects of DoD savings from infrastructure savings, see GAO (1996).

the civil sector.[11] That is unlikely to continue indefinitely. Indeed, the opposite could be the case—in which event the current forecasts of explicit pay increases would be too low, thus exacerbating the underestimate of future pay costs. There is mild evidence of such a possibility in the modest diminution in the enlistment propensity among young Americans over the last several years.[12]

A second factor challenging the DoD is the "boom" and "bust" nature of past investment cycles and their future echoes. The analytic basis for the $60 billion recapitalization figure is the set of procurement plans based on the currently estimated rate of equipment wear-out. That does not guarantee that, at the end of the planning period the stock of equipment on hand will be at the average age desired in the steady state. In fact, the $60-billion figure does leave important mission areas with "over-age" stocks.

Moreover, forecasting equipment wear-out dates is not as exact a science as one might wish. The DoD's history is replete with happy (e.g., satellites) and unhappy (e.g., C-141) examples of actual wear-out that differs from expectations. As one studies the procurement plans of DoD, the balance seems likely to fall on the side of unhappy outcomes predominating, principally because so many items are now planned for long retention. Extreme examples include the KC-135 tanker fleet and the B-52 bombers.

A third factor challenging the DoD is the continued pressure on the budget top line, discussed above. DoD as a source of funding solutions for other federal budgetary needs is evidenced in the history of the last 20 years. In only three years has the Congress appropriated more than the president has requested. In this light, buttressed by the figures in Table 9.3, it is unlikely that DoD will enjoy as large a budget as is now officially forecast for the early 21st century, absent either a change in the international environment that signals a clear

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[11]As measured by broad indices, civil pay for positions most similar to those in defense moved more closely with military pay, although not for all groups. See Hosek, Peterson, and Heilbrunn (1994). Over the long term, it would be surprising if positions in Hosek's Defense Employment Cost Index continued to lag behind the overall civil sector—indeed, there might well be future periods when employment costs for this group will outstrip the general civil sector.

[12] See, for example, *Army Times,* 4 March 1996, p. 4, for results of the Youth Attitude Tracking Survey.

and present danger to the security and interests of the United States or a marked shift in the other determinants of budgetary outcomes not now foreseen (e.g., extraordinary growth in the economy, a change in the public's view of acceptable tax burdens, or a revolutionary revamping of entitlements). Gauging from the past history of erosion in defense budgetary plans, it would not be surprising to see a budget of approximately $200 billion a year (FY97 purchasing power) in the early years of the next millennium.

What Will Fit? Whither the Force Structure?

One summary measure of fit is to ask what force structure could be maintained in the steady state with a budgetary limit of $200 billion in 1997 purchasing power. Held constant in this calculation are current standards of personnel and equipment quality and unit readiness. A first approximation can be based on the relationship between budget authority and structure that pertained in the mid-1980s. This was a period when investment funds were clearly adequate, and the readiness problems of the 1970s had largely been cured. Indeed, it could be argued that the mid-1980s were too generous. On the other hand, there are some burdens on the DoD's budget that weigh proportionately more heavily now than then. Included in those burdens are medical care, intelligence, and environmental cleanup.

Computing the sustainable force structure in this simple calculation requires two other assumptions: How much of the DoD's structure does not scale linearly with the budget—i.e., how much is in "infrastructure" that historically has shrunk less than proportionately as the force structure of the DoD is reduced? And at what rate can we expect that infrastructure to shrink in the future?

Assuming such infrastructure is part of the DoD's cost structure does not imply that it is "bad" or a "problem" whose solution would be the fiscal salvation of DoD. Such infrastructure includes headquarters (e.g., the Pentagon, the specified commands), the training establishment, laboratories, etc. A simple example illustrates why such infrastructure should not necessarily contract proportionately with forces: If DoD maintains the number of ship classes it plans to develop at Cold War levels, neither ship development nor testing costs can be expected to shrink.

While some definitions of infrastructure would yield much higher proportions, it is assumed for the purpose of this calculation that one-third of DoD resides in infrastructure as implicitly defined here.[13] It is further assumed that infrastructure can be reduced over the near to middle term at half the rate the force structure shrinks. Under these assumptions, and using the FY85 budget as a guide to steady state adequacy, the last column of Table 9.4 estimates how much force structure would fit within a budget of $200 billion per year (in dollars of FY97 purchasing power). (For comparison, Table 9.4 provides the end Cold War force structure (FY90), the Base Force recommended by the Bush administration, and the Bottom-Up Review force recommended by the Clinton administration in its first term.) Under these assumptions, it is doubtful that a force of more than one million on active duty could be sustained in the steady state. The allocation of these billets among units of force structure across service elements in Table 9.4 is done on a rough "fair

Table 9.4

Whither the Force Structure?

	FY90	Base Force (95)	BUR	$200B?
Army				
Divisions	28 (18)	18 (12)	15 (10)	12 (7)
Navy				
Ships	545	451	346	230
Carriers	16	13	12	6
Air Force				
Wings	36.5 (24)	26.5 (15)	20 (13)	16 (8)
Personnel (millions)				
Active	2.1	1.6	1.4	<1.0
Reserve	1.2	0.9	0.9	0.7
Civilian	1.1	0.9	0.8	0.8

NOTE: Parentheses indicate active units.

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[13]DoD's broadest definition of infrastructure would embrace 60 percent of its 1996 budget, and GAO's "direct infrastructure" would embrace almost 45 percent (see GAO, 1996, pp. 6 and 8). But in the mid-1980s (the starting point for this simple calculation), one-third is probably closer to the mark, at least for direct infrastructure.

shares" basis. Neither this aggregate measure of how much might fit nor its distribution across service units is intended to be a prescription—or even a forecast of how DoD would actually choose to allocate its resources under such circumstances. Rather, it is intended to portray the force size that could be sustained in terms that command contemporary understanding. It implies that another major downsizing of DoD will be required to deal with the likely fiscal realities of the early 21st century.

WHAT ARE THE TRADEOFFS?

An important assumption behind the results of Table 9.3 is the forecast that the executive and legislative branches will come to a budget level for defense about 20 percent below that now envisaged for the early 21st century. To the extent that military and political leaders can make the case for a higher budget level, such pressure is reduced. That case would presumably rest on the national security and military strategies to be pursued. In such a situation, strategy would indeed be shaping the budget as planners prefer and not vice versa.

But if the budget constraint in Table 9.3 is binding, at least three tradeoffs could produce a substantially larger structure, albeit at the cost of other objectives:

1. Accept some diminution of personnel quality, recognizing that quality is at near-record levels.

2. Accept some reduction in the immediate readiness of some units. This could be realized in a variety of ways—for example, by increasing the reserve content of active units.

3. Reconsider the technological ambition of new equipment, accepting that the level of challenge in the post–Cold War world is less than when we faced the Soviet Union and that the rate of change in that challenge will be likewise diminished.

CONCLUSION

Even at present budget levels, the mismatch between force structure and resources is becoming evident in the public comments of uni-

formed leaders and the conclusions of independent analyses.[14] Resolving that mismatch alone would require at least a moderate force-structure reduction. If the budgetary forecast of this chapter proves accurate, provoking a more serious mismatch, a much more significant reduction would be required.

Whether the eventual reduction in force structure is moderate or significant, it is likely to challenge the ability of the United States to maintain its current concept of being prepared to fight two major regional contingencies on a near-simultaneous basis with a virtually all-active force. The more severe the reduction that must be made to bring structure into balance with resources and force planning preferences, the more it will also call into question current peacetime deployment and employment practices. In short, the United States must either revise substantially upward the resources it plans to devote to defense or must reconsider fundamentally the military forces it believes it needs to meet its military goals and its strategy for employing those forces in support of national objectives.

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[14]See, for example, the comments of the Vice Chief of Naval Operations ("It's possible that the Navy ... is bigger than our checkbook."), quoted in *Navy Times*, 4 November 1996, p. 10; and Congressional Budget Office (1996).

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TRADING BUTTER FOR GUNS: MANAGING INFRASTRUCTURE REDUCTIONS

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INTRODUCTION

Over the decades, U.S. defense expenditures have grown and shrunk in response to changes in world tension.[1] In the past, as total defense expenditures have grown, the infrastructure has also grown, but as defense expenditures have decreased, force structure has usually shrunk more and faster than infrastructure (in both absolute and relative terms).[2] The historical data seem to suggest that, whatever functional and organizational relationships drive increases in infrastructure during expansions of forces and weapon systems, a different set of influences is determinative during downsizings. As

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[2] During the latest drawdown, the particular definition of infrastructure the OSD used has actually shown *budgetary* savings on par with the reduction in total defense expenditures. However, *functional* measures do not indicate such parity. Bases and facilities are underutilized compared to six years ago; there is considerable excess capacity in the maintenance depots; civilian personnel have not been cut proportionately to military personnel; the medical structure has not shrunk at all; and force structure units have been reduced more than infrastructure units. As will be discussed below, what is defined as "infrastructure" in budgetary terms is by no means clear-cut, and so, taking an operational view of the infrastructure, the statement in the paragraph still holds.

difficult as it is to cut force structure and weapon systems, this appears an easy task when compared with the enormous obstacles encountered when attempting to cut infrastructure.

Revealing their deep frustration over these facts, defense managers and analysts typically blame all the "special interests" that dominate Congress for the intractability of inducing reductions in defense infrastructure. Bases cannot be closed; depots cannot be outsourced; defense civilian jobs cannot be reduced; economic interests in various states and communities cannot be jeopardized; the cumbersome procurement system cannot be shredded; civil service personnel rules cannot be changed, etc.—all for clearly enunciated and politically overwhelming reasons, usually summarized by saying that people in Congress face reelection.

While there clearly is something real in such reasoning—after all, it is a political reality that our system *should* represent various interests successfully—it is not a convincing analytical basis for explaining why it is so difficult to undertake cuts in infrastructure comparable to those in force structure. In particular, the existence of political interests that oppose cuts in infrastructure may indeed slow down the rate at which cuts can be made, but they do not make the task impossible. For, on the other side, hard politics *can* be beaten by equally hard analysis. Since it appears easier to cut force structure and modernization than to cut infrastructure, one must therefore ask why the analytical basis for undertaking the cuts in infrastructure is not solid enough to force the cuts to become a reality in the face of inevitable and natural political opposition.

Logically, there are two possible answers to this question. First, it may be that it is harder to create an analytical basis for justifying infrastructure expenditures than for justifying force structure expenditures.[3] Typically, it is alleged that there should be some

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[3]For a concurring opinion, consider this statement:

> There is no satisfactory definition of the proper relationship between the size of a nation's military forces and the base structure needed to support it. Consequently, when a nation trims the size of its military, decisions about reducing the supporting base structure lack a theoretical framework to guide the process. Each service must examine its own operational and contingency plans and requirements and estimate the personnel, equipment,

proportionate relationship between forces and support. Force-structure analysis is based on more or less formal war-gaming scenarios that match forces, equipment, and tactics of potentially opposing sides on the battlefield. The models used are formal and include many assumptions about parameter values. Their formality makes them hard to challenge, even though their internal structure and sensitivity to specific parametric estimates make them less solid than they often appear. Infrastructure is built on even softer ground. Some elements of infrastructure, logistics in particular, can be directly linked to weapons and forces, but even this is a very difficult undertaking in view of the highly variable demand for logistics support for weapon systems, both in peacetime and in war. Other important elements of the infrastructure, such as the health care system, family housing, base operations, and even expenditures on individual skill training are vastly more difficult to justify analytically than is force structure. However, this does not mean that these are intractable analytical problems, simply that they require more attention than they have been given. Better analytical foundations for infrastructure that formalize the relationship between forces and support are clearly needed. The methods may be difficult to establish, but current methods could be improved and would surely help in "rightsizing" the infrastructure of defense.

Second, the other possible reason the defense establishment has been incapable of presenting convincing analytical justifications for cutting infrastructure is that there may be implicit and unarticulated reasons behind the decisions, at various times, not to cut infrastructure as much as force structure during periods of low tension in the world. That is, the analytical tools that would allow for cutting infrastructure in spite of Congressional and constituent opposition may not exist precisely because they have deliberately not been developed by a long succession of secretaries of defense and Service chiefs. It is possible to find both a rational and a cynical explanation for such a strategy. The rational explanation would suggest that fixed investments that may not be needed precisely at this moment nevertheless provide insurance against the possible need for them in the future, and therefore they should not be eliminated every time the

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logistical support, and basing resources needed to meet military objectives. (Glass, 1996, p. 6.)

moment seems opportune. After all, it would be a poor management of a private corporation that shut down and scrapped all of its excess factory capacity during every downturn in the business cycle, for that would leave the company unable to meet the increased demand that is sure to follow in the upswing. Since military and civilian leaders, looking at the historical record, may believe that another boom in defense expenditures lies ahead, they might reasonably conclude that infrastructure should be retained even during downsizings, because infrastructure is one of the slowest and longest-lead elements in permitting the regrowth of forces.

On the other hand, the same reaction may have a cynical explanation: Why buck the formidable opposition in Congress when there is nothing but pain and suffering for all the people involved in the defense establishment as well? Self-interest and bureaucratic inertia are as much alive on the west side of the Potomac as political interests are on Capitol Hill. This is certainly a widely held view in Congress, where many believe that they have not been given adequate rationale for making politically difficult decisions by a defense establishment too interested in preserving careers and support structure. Cynicism on these issues runs deep on both sides of the institutional divide.

Today, however, the world seems different. The end of the Cold War and the demise of the only massive and technologically challenging potential enemy of the United States means a structural shift that has had no counterpart since the victories of World War II. Yet, the uncertainties of the future are so significant that the debate over how to structure *both* forces *and* support is likely to continue for years. However that debate evolves, it is fairly certain that the demands for more-rapid modernization will continue as well and that—absent enabling savings in parts of the defense budget—the Services will not be able to afford either to buy the replacement systems required to preserve present warfighting capabilities or to invest in new and potentially very useful platforms for the future. The allegations that the strategies laid out in the Future Years Defense Program (FYDP) are underfunded and overprogrammed are legion, leveled with regularity against any administration that happens to be in power, in the present as in the past. In a difficult budget climate, with an uncertain threat, where can one find the resources for research and development and new weapon acquisition? Obviously, infrastructure

must be a prime candidate. Congress is not likely to raise appropriations enough to pay for the presently foreseen requirements for recapitalization and modernization. The resources must be found within the Department of Defense (DoD). The pressure on infrastructure is only going to grow and is likely to mount to a level not seen since the end of World War II. Fixed investments must be cut further, and political opposition and bureaucratic inertia must both be faced squarely.[4]

This chapter does not address the critical issue of how to develop a better analytical basis for justifying investments and disinvestments in infrastructure. Rather, the interest here is more in *how* to achieve infrastructure reductions than in *how much* to cut or *what* to cut.[5] The analytically difficult but important question of how much and what to eliminate must be addressed over the coming year as the DoD conducts the Quadrennial Defense Review (QDR). At this point,

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[4]There are some who would challenge that this is a correctly defined trade-off. There are other ways of funding modernization, e.g., by reducing expenses on certain current weapon systems that may not have the value their supporters claim (e.g., V-22, B-2, F-22, and the New Attack Submarine all have their critics), or by reducing force structure farther than now anticipated (in particular, according to some, Army reserve combat units). The present chapter should not be read as taking a position on these issues, i.e., it does not *advocate* the transfer of funds from infrastructure to modernization. Posing this trade-off as an option is, however, a very useful way of identifying certain management issues that are of central importance to the DoD as a whole. The general problems addressed in this chapter are as relevant for someone who sees the need to transfer infrastructure cuts to modernization as they are for someone else who simply wants to reduce excess infrastructure and use the proceeds for any other public purpose. The proposed trade-off between infrastructure and modernization is used in this chapter as a particularly relevant example that is often proposed in current debate; other examples can also be examined.

[5]The discussion in this chapter is limited to a discussion of central policies from OSD to the Services. While this is a large topic in itself, it must unfortunately abstract from three other management relations that are extremely important topics in and of themselves, as well as bearing a critical relationship to the themes of this chapter. The first is the relationship between Congress and the DoD, some aspects of which will inevitably crop up below, but which in general is too complex to address in this chapter. The second is the relationship between the four Services. There are strong elements of both cooperation and competition between the Services, and the dynamics of both these processes affect how OSD interacts with the military departments. The third is the relationship between the Service secretariat and the chief's staff, on one hand, and the executing agents in the major commands (and their subordinate managers of bases and installations), on the other. Unlike what many on the outside perceive, the Services are very complex organizations that are not simple hierarchical structures that can be run top-down by edict. The ability of the Services to implement management initiatives is greatly affected by their own cultures and histories.

we may take it as given that such cuts will be proposed to finance expanded acquisitions of weapon systems. Taking present modernization plans as given, it is possible to use standard budget analytical techniques to estimate the magnitude and timing of demands for additional acquisition resources, as well as the potential sources and the risks of creating the sources for these funds in the infrastructure parts of the defense budget. The main interest in the following is therefore in the unresolved issue of how such cuts can possibly be achieved when it has proven so difficult to accomplish them in the past. Is it really different this time? Can it be done—cutting infrastructure to buy weapons? If so, what would it take?

This chapter will review some of the recent experience in attempting to cut infrastructure through central management initiatives. The essential conclusion is that these attempts have been less successful than expected, partly because they have been poorly conceived but primarily because they are founded on a fundamentally flawed vision of how DoD can be managed. Top-down management initiatives do not work because the agencies that have to undertake the difficult implementation are, by institutional design, too independent to be run by secretarial edicts monitored by the Office of the Secretary of Defense (OSD). This chapter argues that a better analytical foundation from which to understand how to manage infrastructure is an approach taken from mathematical game theory—in particular, a special version called the prisoner's dilemma.[6] Such an approach views the actors as pursuing independent strategies, and they can only reach cooperative solutions by designing credible strategies that respond to initiatives from the other side. The next section of this chapter discusses how to define infrastructure. The following three sections review past attempts at rightsizing infrastructure, and the sixth develops the game theoretic approach. The last discusses the relevance of this for the QDR.

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[6]The essential feature of a prisoner's dilemma game is that there are significant gains to all parties from reaching cooperative solutions to common problems, but that there are strong incentives for all the parties involved to defect and pursue self-interested strategies. If all involved follow independent strategies, the worst of all attainable outcomes result.

WHAT IS INFRASTRUCTURE?

A simple definition of infrastructure would suggest that what is not forces is support, i.e., infrastructure. This simple approach fails for reasons already alluded to above. Force structure is "teeth," and everything else is "tail." In a warfighting culture, it is better to be tooth than tail, especially when there is a contentious battle over resources. Consequently, it has been alleged that many activities that in the past were considered separate support functions not directly associated with forces have over time found their way into forces and are no longer part of the infrastructure. Draw a line in the school yard and tell everyone on this side of the line that they will get first choice in picking seats at the football game, then watch the stampede to get across the line. Something similar has been happening with respect to which activities constitute forces and which constitute infrastructure.[7]

Tables 10.1 and 10.2 show the broad functions and budget categories that are currently included in the definition of infrastructure. Table 10.1 shows infrastructure categories, which encompass the following activities:

- *Installation support* includes real-property maintenance, base operating support, real estate management for all bases, family housing, base supply operations, base closure activities, and environmental programs. This is the largest infrastructure category, accounting for about 22 percent of total expenditures.

- *Central training* includes virtually all nonunit training, i.e., basic and individual skill training, officer training and development, aviation and flight training, and similar activities.

- *Central medical* includes patient care for active military personnel, dependents, and retirees, as well as training of medical per-

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[7]In view of the discussion earlier, it should be noted that the drift of activities from infrastructure into force structure happened mostly during the upswing of defense expenditures during the 1980s. During downsizings, it may be better to attempt to hide from the evil eye of budget cutters deep inside infrastructure accounts, so one might expect a movement in the opposite direction at present. The point is that the line between forces and infrastructure is not always clear.

Table 10.1

Projected Funding for Infrastructure Categories, FYs 97–01 ($billions)

Infrastructure Categories	FY97	FY98	FY99	FY00	FY01
Installation support	25.10	23.64	22.68	22.53	23.03
Central training	19.35	19.40	20.08	20.71	21.46
Central medical	15.47	15.82	16.13	16.64	17.38
Central logistics	13.33	13.30	14.18	14.15	14.70
Force management	12.91	12.38	13.05	13.12	13.35
Acquisition infrastructure	10.25	10.64	10.97	11.19	11.76
Central personnel	10.33	10.24	10.41	10.60	10.83
Central C^{3}I	5.78	5.84	6.05	6.05	6.20
Resource adjustments	0.05	0.53	0.50	0.62	0.58
Total direct infrastructure	112.60	111.80	114.00	115.60	119.30

SOURCE: General Accounting Office (GAO) analysis of DoD data.

sonnel, management of the medical system, and support of medical installations.

- *Central logistics* includes centrally managed logistics organizations, such as management of inventories of materiel, operation of the supply system, maintenance activities, materiel transportation, operation and support of centralized installations, communications, and minor construction.

- *Force management* includes the funding, equipment, and personnel assigned to the management and operation of all the major military command headquarters activities, the resources for DoD-wide departmental headquarters, management of international programs, support to other defense organizations, security investigations, public affairs, and criminal and judicial activities.

- *Acquisition infrastructure* includes research and development activities, program management, production support, science and technology, and test and evaluation activities.

- *Central personnel* consists of all programs that support recruiting of new personnel and the management and support of DoD dependent schools, family support centers, child development centers, and youth activities. Also included are all costs of permanent change of station (PCS) moves, personnel in transit,

civilian disability compensation, veterans education assistance, and certain other personnel support activities.

- *Central command, control, and communications and intelligence (C³I)* consists of programs that manage all aspects of the C³I infrastructure of DoD, information support services, mapping products, and security support; it includes nontactical telephone services, the general defense intelligence program and cryptological activities, the Global Positioning System, and support for air traffic control facilities.

Obviously, this is a very diverse set of activities. They are lumped together under one heading for convenience only, not because they necessarily have any direct functional relation to one another. Some of the activities are obviously critical to warfighting, such as manning and operating headquarters, the Global Positioning System, various C³I activities, mapping services, and the maintenance of bases and ranges. These and other elements seem to be included in infrastructure because they serve either the Joint or the entire warfighting community and therefore cannot be assigned to a particular force unit. Others are far removed from any military training or opera-

Table 10.2

Direct Infrastructure by Appropriation, FYs 97–01 ($billions)

Appropriation	FY97	FY98	FY99	FY00	FY01
Operations and maintenance (O&M)	56.30	56.17	56.41	57.57	59.50
Military personnel (MILPERS)	33.53	33.10	33.67	34.33	35.20
Research, development, testing, and evaluation (RDT&E)	10.47	10.89	11.20	11.43	11.89
Military construction (MILCON)	4.99	4.15	4.15	3.84	3.96
Family housing	3.98	3.84	4.08	4.08	4.12
Procurement	2.38	2.53	3.48	3.21	3.46
Revolving funds & other	0.93	1.11	1.06	1.13	1.17
Total direct infrastructure	112.60	111.80	114.00	115.60	119.30

SOURCE: GAO analysis of DoD data.

tional activity, such as medical care for retirees, base closures, and environmental cleanup. Since the object of desire in infrastructure is to find resources to shift to more critical activities, it is of interest to look at the funding lines. What stands out is how flat the projections are over the coming years.[8] The activities are, on average, growing slowly over time, but there are no dramatic shifts. Also, since each of the infrastructure categories represents a complex of activities in itself and since no one category obviously dominates, it is difficult to look at these numbers and find any obvious candidate for major infrastructure savings. The devil is in the details, and the table gives only a glimpse of how large a puzzle this is to piece together.

Table 10.2 displays the same total projected expenditures by appropriation categories. Here, funding from two accounts, O&M and MILPERS, clearly dominates, accounting for almost 80 percent of the expenditures. Again, what stands out is how relatively flat the projections are in all the accounts. Still, this table suggests that, if there are real savings to be found in infrastructure, they must come from O&M or MILPERS. Since a large element of O&M is funding for civilian personnel and base support, it is not difficult to conclude that all activities that place demands on personnel and on installation support are among the prime candidates for the chopping block.

While infrastructure contains elements that are essential to warfighting functions, it is also true that force-structure categories and appropriations contain elements that most people would associate with support structures. For example, intermediate maintenance activities, i.e., those that are not based in central maintenance depots, are funded through force-structure appropriations yet constitute activities that, while important for warfighting, clearly are much like other support activities.

The point is simply that the various activities under consideration both in force structure and in infrastructure are so disparate that all aggregations must contain a certain degree of arbitrariness. There are many ways to portray related activities and their costs in the defense budget. For that reason alone, it would not be prudent to allow important decisions to be driven by categorizations that are

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[8]The dollar figures are in current values and indicate some growth that is expected to be less than inflation, so there is some real decline built into the program.

bound to be fuzzy. The real issue is how to spend scarce defense dollars on the activities that best support warfighting needs. If further savings can be found in support activities that happen to be funded in force-structure appropriations, that should not be an issue, just as it must be recognized that critical warfighting support functions are funded in infrastructure accounts. By implication, it might be said that the worst possible way of cutting infrastructure (and force structure) is to "salami slice," i.e., to cut even shares of all programs. The complexities inherent in the multitude of disparate activities across the Services are of such an order of magnitude, however, that the worst possible way is often the only simple and practical method available—so the salami slicing of program budgets is allegedly a common practice in the DoD.

Conceptually, the correct principle to apply when allocating budget resources—whether they are rising or falling—is taken from cost-benefit analysis and implies that the utility or efficiency of the last dollar spent should be equalized in all activities. If an added dollar delivers more benefits in one program than in another, it should be reallocated. This simple and fundamental principle is, unfortunately, very difficult to apply in practice. Doing it right requires precise and common metrics that are often unavailable (especially measures of effectiveness of program activities), accounting systems that do not exist (detailed tracking of individual cost elements), knowledge of options that may exist but are not now chosen (especially the costs of alternative ways of providing a service or producing a good), and a considerable amount of time to digest and analyze the data to compute the right answers (time is perhaps the scarcest commodity for defense budget analysts). Qualitative data and analysis may substitute where appropriate, but the reality is that programmers and budget analysts are often forced to reach for the old salami slicer. For that reason alone, the particular definitions used to put a program element under this category or that category may be very important: If the time comes to protect force structure but enforce equiproportionate reductions in all infrastructure elements, it may matter greatly to which category a particular activity is assigned.

For the purposes of designing policies to reduce infrastructure, it is typically assumed that there is sufficient visibility of cost elements to estimate the effectiveness of dollars spent on different programs at some reasonable level, so that it is possible to identify inefficiencies

wherever they are, whether in force structure or in infrastructure. But this is far too facile an assumption and, indeed, is quite dangerous. A central issue in DoD is that it is extraordinarily difficult to create a crosswalk from budget categories (typically, from program elements) to measures of functional and operational outcomes. Policy and management initiatives are invariably couched in budget terms, while actual expenditures occur in the context of meeting operational requirements. The lack of a clear connection between these two categories creates a critical information problem about the functional effectiveness of budgetary commitments. This creates an institutionalized conflict between senior policy managers, who are responsible to Congress for managing within a given a budget, and lower-level operational managers, who are responsible for producing goods and services. Much of the discussion in the rest of this chapter can be said to relate to the difficulties of coordinating budgetary and functional decisions when (a) adequate output measures are often not present and (b) when the connection between budget categories and functional operations is unclear.

RECENT PROPOSALS FOR INFRASTRUCTURE REDUCTIONS

We begin by reviewing two recent studies. The first is the report of the Commission on Roles and Missions (CORM), which was published in the spring of 1995. The second is a study the Defense Science Board (DSB) undertook during the summer of 1996.

The CORM developed its recommendations on infrastructure from a very high level (CORM, 1995). It can be understood as based on three "stylized facts" that together suggest a good rationale for very radical changes in the way the DoD organizes its support functions. The following were the three precepts (CORM, 1995; see especially pp. 3-1, 3-2, 3-9, and 3-10):

- The private sector has in recent years successfully used new and effective management techniques. These are centered around a multitude of practices that support so-called lean organizations and require extensive reengineering of internal processes, as well as strategic partnering with cooperating subtier firms in the value-added chain from raw materials to final product.

- It has proven very difficult to apply these methods successfully in the federal government, in spite of such attempts as Vice President Gore's National Performance Review, at least partly because there are no strong incentives for making the changes. As a result, the performance of internal sources for support services is increasingly falling behind the private sector, and the inefficiencies mount and become more glaring over time.

- A fundamental principle has been firmly enunciated in traditional federal policies regarding what constitutes an inherent governmental function. One of the cornerstones is that the federal government should not compete with its citizens for the same business. The government should only do what the government must do because the private sector cannot, but anything else should be done in the private sector.

On the basis of this broad approach, the CORM apparently came to the conclusion that no solid analytical foundation was needed for very broad recommendations that practically all commercial activities in the DoD should be outsourced. The Commission flatly rejected as unsound such requirements as public-private competitions. It stated that

> detailed comparisons of the likely costs of future activities between public and private entities still founder on the lack of comparable accounting systems, incompatible profit/loss mechanisms, and the uncertainty of future workloads. (CORM, 1995, p. 3-5.)

As a result, the CORM stated that the requirement for lengthy and detailed cost-based justifications for outsourcing any activity with more than 10 employees embedded in the Office of Management and Budget's (OMB's) circular A-76 is inconsistent with efficient resource management in the federal government and recommended that it be withdrawn (CORM, 1995, p. 3-6). The only way to cut through government red tape and get immediate access to private sources is to pursue outsourcing aggressively wherever an opportunity exists. The private sector is inherently more efficient, and the government has no right to compete with it. Therefore, outsource what can be outsourced, and reengineer the rest. However, noted the Commission, the Services cannot be relied on to determine what constitutes an inherently governmental function (a "core" activity in

the current parlance of the defense establishment), so outsourcing should be pushed in every case in which a related private good or service is available.

The CORM recommended considering outsourcing of vast areas of current defense activities. Among these were the following (CORM, 1995, Ch. 3, passim):

- The support for all new weapon systems

- All existing depot-level maintenance

- Materiel management activities (cataloguing, inventory management, warehouses)

- Medical care for nonmilitary personnel and dependents

- Operation and maintenance of military housing

- Finance and accounting services

- Data-center operations

- Education and training

- Base management, including now-prohibited outsourcings (fire fighting, base security).

As a strategy for achieving significant outsourcing, this is very ambitious. Deputy Secretary of Defense John White, who was the Chairman of the CORM, has over the last year endeavored to implement the CORM recommendations by setting up integrated product teams in the OSD to pursue privatization options vigorously and has given the Services certain targeted savings they should achieve through increased privatization. After over a year of intense efforts, it remains unclear how successful these activities have been.

With respect to reengineering, the CORM recommended the streamlining and consolidation of logistics support activities across the Services; the elimination of redundant acquisition organizations, procedures, and personnel; the collocation of aviation support organizations; single inter-Service management elements for certain aviation systems; and a drastic reduction of the Operational Support Airlift. In this context, the Commission's report makes the following noteworthy observation (CORM, 1995, p. 3-20): "Lack of trust and

reliance on consensus among participating Services have limited the efforts to attain the full benefits of inter-Servicing." We return to this theme below; it has profound implications for how infrastructure savings can be achieved.

Perhaps the most interesting element in the CORM's approach to infrastructure reductions is that it recognized a Gordian knot of conflicting interests and that ineffective attempts at resolving them had been made in the past, and the CORM strove to cut through it all with a high-minded philosophical sword. It will be interesting to see whether such an approach can succeed in overcoming the natural resistance within the Services and among career civil servants against drastic changes in current modes of operation and, in particular, whether it will prove a sufficiently strong argument to convince members of Congress to go against their constituents who adamantly support the status quo. A statement that "the government should not be doing this at all" is probably not altogether convincing to a person who has made a career out of producing just that function and who now stands to lose his or her job to a new policy. Resistance is inevitable, even when not justifiable on public cost-benefit grounds.

The DSB recently concluded a summer study on potential savings in the support structure of DoD (DSB, 1996c). The DSB Task Force focused on identifying specific approaches for lowering costs and enhancing performance and on finding mechanisms for shifting funds from support to modernization and enhanced combat capabilities. The Task Force claims that implementation of its suggestions would yield savings of over $30 billion per year in five years (DSB, 1996c, p. 14). The principal mechanism by which this would be accomplished is increased outsourcing, leading to a reduction in the civilian workforce of 4 percent per year and a reduction in military personnel of 2 percent per year, for a total reduction of 363,000 spaces, of which 190,000 would be civilian.[9] Of the reduction of military personnel by 173,000, no less than 135,000 would come from CONUS-based logistics. Deployed logistics would be reduced by 60,000 civilian spaces. This is equivalent to a 27-percent reduction of all personnel in CONUS and deployed logistics. Another important

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[9]The numbers cited in this paragraph come from DSB (1996c), p. 28.

area slated for reductions is special skill training, where 66,000 civilian spaces would be cut, out of a total of 115,000 civilian and military spaces—a reduction by more than 57 percent in a few years. Base support operations would lose 50,000 spaces (half civilian, half military) out of a work force of around 148,000, i.e., a 35-percent reduction. Of the total personnel reduction of 363,000 the DSB Task Force proposed, logistics and special skills training account for 311,000, or almost 86 percent. Clearly, these are very dramatic changes.

The strategy the DSB Task Force chose is to rely heavily on outsourcing and privatization. The following areas were proposed as particularly ripe for outsourcing:[10]

- Routine finance and accounting services immediately; implementation of activities-based cost accounting methods that, by FY99, will allow significant use of commercial-off-the-shelf software platforms and increased outsourcing. Total savings: $3.4 billion per year.

- The central elements of the logistics function: maintenance, supply, inventory management, transportation. Total savings: $9.3 billion per year.

- Bases: a renewed effort at base closures and a reduction in base support operations. Total savings: $8.4 billion, of which $6 billion would come from additional base closures.

- People support cost: medical benefits and family housing. Total savings: $5.3 billion.

- Individual skill training. Total savings: $1.8 billion.

The DSB Task Force estimates that the total savings from increased outsourcing and improved operations will be close to $30 billion. The five areas just specified would account for just over $28 billion per year, or 94 percent of all savings. In addition to this, the Task

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[10]The DSB Task Force reports the estimated savings quoted below. It is unclear exactly how the Task Force arrived at these estimates as there is no documented analytical trail that can be followed. Hence, the dollar figures should be interpreted as "best guesses" by very senior and very experienced policy managers and analysts. While there is, in principle, nothing wrong or objectionable about order-of-magnitude quantifications of qualitative judgments, great caution is warranted when basing budgetary policies on such uncertain data.

Force notes that the current acquisition system—according to studies by Coopers and Lybrand and others—adds around 20 percent to equipment costs and also causes extensive overcapacity in the acquisition workforce. The DSB panel suggested that reforms in this area add at least another $10 billion in potential infrastructure cost savings (DSB, 1996c, p. 52).

The urgency that drove the DSB panel to such dramatic recommendations has its basis in the acquisition plans that are driven by the need to replace aging weapon systems. Table 10.3 illustrates the underlying problem: Total acquisitions are projected to grow by $17 billion per year in FY01—but there is significant risk that the sources for those funds will not be able to deliver what is planned. In all cases, OSD(PA&E) estimates that there is a very high potential for a significant downside, as opposed to the positive contributions that would be required. Thus, the entire modernization program proposed in the DoD's current budget plans is extremely risky, leading to a need to find alternative sources for the required modernization funds.

Table 10.3

Risks to Planned Procurement Growth Based on "Likely" Trends ($ billions)

Source	Plan 2001	Risk	Potential in 2001
Top-line growth	+2	Risk to top line from congressional budget resolution	−10
	—	Congressional "add ons" that replace required modernization	−6
MILCON	+3	BRAC cost growth	−1[a]
MILPERS	+5	Resistance to Army end-strength reduction	−1
O&M	—	Funding for operational contingencies	−3[a]
	+1.5	O&M likely to rise	−2[a]
	—	Depot/real property maintenance growth	−2[a]
RDT&E	+5.5	RDT&E required at a higher level	−4
	—	Acquisition program cost growth	−4[a]
	—	Growth in C^4ISR (vs. planned reductions)	−5
TOTAL[b]	+17		−38

SOURCE: DSB (1996c).

[a]Included in Defense Program Projection (DPP) assessment of programmatic risk.

[b]$38B per year of downside risk in the $17B per year of planned increases for modernization.

One can fairly debate whether the magnitude of the savings the DSB Task Force proposed is realistic. There is no precedent in the DoD itself for achieving such a massive realignment of the infrastructure. There is indeed no precedent in the entire federal government for reducing costs of operations, reengineering functional processes, outsourcing, and reducing federal government personnel, except in minor agencies that have been terminated by legislation. It is unlikely that any U.S. state agency has achieved similar results. The best examples of drastic realignments of the kind the DSB panel proposed are probably found in successful privatization actions undertaken in other democratic countries, in particular, perhaps, Great Britain.

One can also fairly debate whether the organizational and institutional framework exists within the current DoD that would allow the proposed drastic realignments to take place. The DSB panel suggests the need for a strong and committed leadership in OSD that sets the direction for the DoD; determines the goals for the Services; and aggressively works on Congress to remove any impediments to downsizing, outsourcing, and efficiency enhancements that may exist in any legislation pertaining to procurement rules, civilian personnel management, and specific legislative restrictions on outsourcing. But can this be done in time so that $30 billion in savings per year can possibly be attained by FY01? A certain degree of skepticism is unavoidable.

It is of particular interest to consider the strategic approach the DSB Task Force took. This is the proposal to arrange for a direct transfer of funds from infrastructure to the acquisition of weapon systems. The strategy is unusual in that it proposes an implicit contractual agreement: The Services will be allowed to transfer any savings that they can accomplish in infrastructure areas (mostly O&M, MILPERS, and MILCON savings) into the acquisition budget. The policies the panel proposed can be interpreted as an attempt to strike a deal: By promising significant funds for weapon systems, the panel is suggesting that there will be sufficient motivation for undertaking the difficult and painful cuts in infrastructure that are necessary to achieve modernization. This approach may have much to recommend it, but it flies in the face of existing management principles within the DoD, where it is more common for central managers only to direct whatever cuts that must be taken in various

budget accounts and quite deliberately to avoid making any implied or explicit promises or guarantees about where the savings will be applied.

In summary, these two recent studies have much in common in that they point to outsourcing and internal-process reengineering as the two most profitable avenues for reducing infrastructure costs and for enhancing performance. They differ in the strategic approach recommended—the CORM taking a philosophical road regarding the proper role of government, the DSB panel taking one of creating a sense of urgency related to the likely funding shortfall for required modernization. The DSB panel also takes the step of presenting more precise figures for what its members consider to be achievable savings. Unfortunately, both studies also have in common that there is considerable doubt as to whether either approach in the end will deliver what is required. In fact, neither offers any credible mechanism for ensuring that the savings actually find their way into modernization. Therefore, both approaches seem to ensure only the pain of downsizing, outsourcing, and reengineering, but offer no credible assurances that the offsetting gains in faster modernization and enhanced operational capabilities for the forces are realistically likely to occur. It is as if Churchill had offered blood, sweat, and tears with only a vague hope for victory; yet, what made his leadership so inspirational and effective was precisely that he gave a credible promise of an *inevitable* victory. If the concept of gain through pain is bad enough, pain without gain is not attractive at all, on either side of the Potomac.

WHAT SAVINGS FROM OUTSOURCING AND REENGINEERING?

There is evidence from the private sector that both outsourcing and internal process reengineering *can* yield significant cost savings and performance improvements. There is no evidence, however, that it is simple to attain these goals, and they are by no means guaranteed. Examples of failures abound in both areas.[11]

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[11]See e.g., Champy (1995). This book is built on a previous book by Champy and Hammer (1993). The theme of the second book is that the message of the first book often failed to become implemented because management was static and therefore

A recent DSB study contains some rough estimates from the Center for Naval Analyses (CNA) of what savings can be expected (DSB, 1996a). Table 10.4 shows that the average saving from competitions for sourcing various DoD activities is 31 percent. This includes both savings accruing from improved performance from organic providers who won these competitions against outsiders and savings from direct outsourcings to external providers.[12] The underlying data indicate that most of the savings are attributable primarily to reductions in the number of personnel required to perform the tasks but, to some extent, also to lower labor costs in the private sector. Additional analysis of Navy data showed average savings of 29 percent for over 800 activities that were competed between private and government providers; the savings were 40 percent when private vendors won, as opposed to 20 percent when government entities won.[13] It is of particular interest to note the finding that the greatest savings occurred when military billets were outsourced to the private sector. This reflects the fact that military manpower is more expensive than civilian manpower when all costs (recruiting, training, health care, retirement accrual, etc.) are included.

There are many problems with the estimates just reported, and they cannot, without further analysis, be taken on face value as indicative of the magnitude of savings that can be anticipated from increased, large-scale outsourcing in the DoD. Among the difficulties are the following:

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ineffective. Successful reengineering requires examining both internal functional processes and the role of management.

[12]There is clearly some difficulty in interpretation here: The data implicitly assume that all savings that occurred after the competitions should be attributed to the competitions themselves. This is a typical example of the *post hoc, ergo propter hoc* reasoning that is very dangerous in historical analysis. Before the total savings can be attributed to the competitions, it would be necessary to estimate what savings would have accrued from improvements in the performance of organic providers absent any competitions. This historical counterfactual is not readily available, but it is difficult to believe that there would have been no improvements whatsoever.

[13]Again, great care is required in interpreting these numbers. It would be easy to draw the inference that the savings from those activities that stayed organic would have been twice as large had they only been outsourced to the private sector, but this would not be warranted, given the nature of the available data. Government providers won the contracts considered here in competition with private bidders, and this *may* imply that the 20-percent savings rate on these activities was the best that could be achieved.

Table 10.4

Savings from A-76 Competitions, 1978–1994

Service	Competitions Completed	Total Annual Savings (FY96 $M)	Savings (percent)
Army	510	470	27
Air Force	733	560	36
Marine Corps	39	23	34
Navy	806	411	30
Defense Agencies	50	14	41
Total	2,138	1,478	31

SOURCE: Adapted from DSB (1996a), p. 32.

NOTES: Outside vendors won 52 percent of the A-76 competitions, but accounted for 78 percent of the total savings.

- OMB circular A-76 requires federal agencies to perform exhaustive public-versus-private cost comparisons before outsourcing functions that government employees traditionally perform, a process that is time consuming and, in principle, biased in favor of organic providers.

- A-76 competitions are typically small (having an annualized value of a few million dollars) and tend to have limited duration (typically, three years); outsourcings in the private sector tend to be larger and involve long-term contracts.

- The largest A-76 competitions have involved at most a couple of thousand positions and have not been used for outsourcing large numbers of jobs.[14]

- Significant statutory mandates limit the ability of the DoD to outsource many activities: restrictions on outsourcing "core" logistics functions, prohibitions on outsourcing firefighters and security guards at military bases, and a limit of 40 percent of depot maintenance work, among other impediments or prohibitions.

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[14]The information in these three bullets is partly based on ongoing research within RAND by Edward Keating under a project for OSD entitled "Cancellations and delays in completion of A-76 cost comparisons."

- The federal government procurement process mitigates against efficient outsourcing in that it fosters a legalistic, distant, and even adversarial relationship between government contracting agents and private providers. Government contract officers are reluctant to use "best-value" contracts, as opposed to lowest-cost contracts, and are therefore reputed not to represent the best interest of the functional agents within the government in securing the best available performance.

- The government contracting system relies on a strong preference for arms-length, competitively chosen vendors. In the private sector, the preference in significant outsourcings is for long-term contracts with close relations between vendor and buyer that often become close partnerships; the level of trust required for such relations is difficult to establish in the much more formalistic environment the federal contracting system creates, especially as DoD applies it.

- The cost-accounting system that government entities use is suitable for the budget process and not at all suitable for allowing valid comparisons between organic and private providers.

- Of particular concern is that there are no strong incentives within the DoD for managers at various levels to initiate outsourcing and to go through all the cumbersome and time-consuming steps to attain the benefits of privatization. There is a great risk that the process itself may be halted at any point. Even if it is concluded, however, the benefits do not accrue to the manager or the entity that undertook all the effort; the savings are typically transferred to other activities within the budget. If the manager is military, there is even a great probability that he or she will have rotated to another assignment by the time cost savings or performance enhancements are realized.

These and other procedural hurdles make outsourcing difficult to undertake in DoD. The system is strongly biased in favor of the status quo of internal providers, and significant savings cannot be expected until many of these impediments have been removed. While many studies have proposed the elimination of these restrictions, little progress has thus far been made. This makes it very difficult to compare savings from private outsourcings with what might be attainable in the defense establishment, except that the implica-

tions are that whatever cost savings and performance improvements have been realized in private outsourcings are likely to be much smaller in defense.

In addition, when comparing an organic provider with an outsider, it is important to be careful to ensure that similar activities are actually considered. For example, it has often been alleged that outsourcing military health care of civilians (dependents of active-duty members and military retirees) would reduce costs. Recent studies of this issue have not confirmed the expectation. Surprisingly, they find that the cost savings from buying private medical care for civilians would be rather negligible. One of the reasons is that, in the defense health-care system, the high-cost treatments either are not done or have already been outsourced. The most expensive care in the private sector is given to the very young (usually for prenatal or birth complications) and to the very old (often, just prior to death). While the number of families with young children is growing in the military, they tend to be healthier than the general population and therefore have a lower incidence of high-cost care for the very young. The very old are generally paid for by Medicare and do not burden the military health establishment. Expensive specialty care for active-duty personnel and their dependents is already referred to civilian hospitals and physicians. Military medicine concentrates on delivering the less-complex treatments and therefore is also less expensive. Couple this with the fact that military physicians and nurses are paid less than their civilian counterparts, and the net is not obviously in favor of outsourcing all medical care. Therefore, the most careful studies that recommend outsourcing medical care make the case that this is justified more on the grounds that there is no persuasive reason why a military establishment should devote time and management effort to running health-care services for civilians. This is an *organizational* argument and is not related to either cost or performance.[15]

The intense focus in the top of the DoD on outsourcing as a means of improving performance and reducing costs of various organic activities is driven to a great extent by the repeated demonstrations that there are significant differences in performance levels between gov-

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[15]In the contemporary parlance, civilian health care is not a core competency for DoD.

ernment and private providers (See Girardini, Moore, et al., 1995, especially pp. 23–25). This stands in some contrast to the much heavier emphasis on internal process reengineering that is the hallmark of changes in the modern corporate environment. It is not that outsourcing is not important in the private sector—it is—but that it is an adjunct and close partner to efforts that look at the entire value-added chain within a corporation. When activities are outsourced in the private sector, they often give rise to a partnership that brings the vendor in as a close member of the outsourcing. Outsourcing in the private sector is thus a way of attaining the benefits of process reengineering without actually having to undertake the difficult work inside the organization. But the partnerships that are created through many outsourcings make it seem like the outsourcing organization treats its new partner as if it were a reengineered in-house operation rather than an external activity that no longer requires attention from senior management. Successful outsourcing arrangements are often quite management intensive, and that is why they bear a close relationship to process reengineering. The choice facing an outsourcing agent is neither to do costly and difficult reengineering of internal process nor to go to an outside vendor and get guaranteed and simple performance instead; rather, the choice is between the costs of having to manage a close relationship with an outsider as opposed to having to go through with the internal reengineering effort. The choice is not always obvious. Outsourcing is not a panacea, and it does not necessarily reduce the need for managerial oversight.

With regard to process reengineering, there are success stories from the private sector that point to the potential for spectacular results. They suggest that a thorough reexamination of a company's entire set of functions can result in significantly higher productivity at very small costs in terms of investments. The following examples are taken from the recent book *Lean Thinking* by James Womack and Daniel Jones (1996).

Pratt & Whitney, one of the world's largest producers of jet engines and an important supplier to the military, faced a difficult future in 1991. Demand for new aircraft had fallen because of problems in the airline industry, and the collapse of the Soviet Union meant a reduction in production for the DoD because of the end of the Cold War. Rather than develop new technologies for more efficient engines or

downsize the company and bring in outside investors, Pratt & Whitney chose to reengineer and make itself more productive and thereby more competitive. They brought in a Japanese specialist in lean production methods in the spring of 1992. They got a new perspective:

> In the space of a week, a series of activities at Pratt's massive Middletown, Connecticut, plant were consolidated and the amount of effort, space, and tooling needed was reduced by 75 percent. Jaws dropped and a wide range of continuing improvement activities were started.... (Womack and Jones, 1996, p. 169.)

The company then brought in a new president and set about serious reengineering of every aspect of the production cycle. The results were that

> By mid-1995 Pratt had totally revamped its entire physical production system. The mass-production, batch-and-queue, "tinker till we get it right" philosophy built up over nearly 140 years was gone and the company was completely converted to a flow organization stressing first-time quality with no backflows. . . . The eighty business units ... were reconfigured both organizationally and physically.... In the end, all seven thousand of Pratt's machines were moved (some many times), and by the end of 1995, every production process in the entire Pratt & Whitney Company had been *kaikaku*ed and *kaizen*ed [reengineered] at least once, with the objective of creating a continuous-flow cell for each part with substantially zero in-process inventory within the cell.... As a result, throughput time fell from eighteen to six months (with a near-term target of four); inventories of raw materials, work-in-process, and finished goods on hand fell by 70 percent and are still falling; the massive central warehouse which formerly stored all parts moving between production steps was closed; referral of quality issues to Material Review Boards declined by half (with a goal of eliminating MRBs by the end of 1996); and unit costs for a typical part have fallen 20 percent in real dollars even as production volume has fallen by 50 percent. This last measure is perhaps the most important because in the old days of mass production, Pratt's unit costs would have gone up by 30 percent or more in this circumstance and the company would probably have been forced to merge or exit the industry. (Womack and Jones, 1996, pp. 182–183.)

This company produces the same jet engines as before, with the same technology. All it took was a radical look at how all internal processes really supported the company, then rebuilding them from the ground up. The operating results of the company went from losses of $283 million in 1992 and of $262 million in 1993 to profits of $380 million in 1994 and of $530 million in 1995, even though sales had not rebounded (Womack and Jones, 1996, p. 187).

Summarizing the series of case studies done for the book, the authors make the following startling claims:

> Converting a classic batch-and-queue production system to continuous flow with effective pull by the customer will double labor productivity all the way through the system (for direct, managerial, and technical workers, from raw materials to delivered product) while cutting production throughput times by 90 percent and reducing inventories in the system by 90 percent as well. Errors reaching the customer and scrap within the production process are typically cut in half, as are job-related injuries. Time-to-market for new products will be halved and a wider variety of products, within product families, can be offered at very modest additional cost. What's more, the capital investments required will be very modest, even negative, if facilities and equipment can be freed up and sold. (Womack and Jones, 1996, p. 27.)

It seems that serious reengineering along the lines of *Lean Thinking* may not be a free lunch, but it can be a cheap lunch, and certainly a good one. That is, if it can be done. The question of whether it can be done is not trivial, in any organization, but especially in government. There are many examples of failures in reengineering, as there are in outsourcing (see, e.g., Champy and Hammer, 1993). Most often, significant reorderings of organizations fail because the people involved, especially middle managers who stand to lose not only their jobs but their entire careers, simply will not support the proposed changes. As noted above, this is a significant obstacle in government as well.[16]

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[16]See the following statement:

> Reengineering typically involves undertaking a risky, innovative venture, which is not generally encouraged within the federal government. Federal managers have little or no incentives to make difficult and personally disruptive changes that are associated with reengineering, particularly if their

The purpose of this section has been to give a brief review of both the lure and the dangers of relying heavily on outsourcing and process reengineering. If done right, both tactics can yield significant gains. However, both are fraught with considerable difficulty in a political and bureaucratic environment that has hitherto been less than fully supportive. Both avenues should clearly continue to be pursued, preferably in conjunction with each other, but it will require very skilled management of the DoD and all its suborganizations to attain anything like the most successful results of the private sector.

RECENT DOD ATTEMPTS TO IMPROVE INTERNAL OPERATIONS

The focus on infrastructure reductions is not new with the current administration and the two secretaries of defense who have served it. In fact, most of the drawdown of defense expenditures was planned during the Bush administration, and its execution began during Secretary Cheney's time. It was very clear to senior policy managers at the time that it would be necessary to introduce more businesslike methods into the DoD. Unfortunately, the record thus far is not very reassuring. We cannot here review all the policies and administrative actions put in place over the last few years. However, two major initiatives deserve special attention because they illustrate the particular culture of management prevalent in the OSD.

In 1991, the DoD began an initiative called Corporate Information Management (CIM).[17] The purpose was to attempt to bring some order and central management to the DoD's diverse and complex automated information systems, many of which could not communicate with one another because they resided on incompatible platforms and used incompatible software. Another purpose was to centralize purchasing of both hardware and software so that the enormous buying power of the defense establishment could bring prices down and to avoid paying for redundant programming when

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budgets will be reduced by the amount of projected savings. (Heivilin, 1995, p. 16.)

[17]CIM was part of a large effort at improving the effectiveness of many management areas of the DoD. This effort began in 1989 under an umbrella called the Defense Management Review. This review led to over 2,000 decisions (called DMRDs, for Defense Management Review Decisions). CIM was created by DMRD 925.

similar code was developed over and over again for related but separately managed applications. Standardization of hardware and software and modernization of obsolete platforms and code would also reduce maintenance costs radically.

A central problem for such centralized management of information systems was that it soon appeared that it was difficult, in many functional areas (e.g., logistics and personnel), to apply similar systems to processes that seemed very similar in purpose across the Services but which in fact were very different in significant details. This forced CIM to make a choice between (1) making a top-down effort to reengineer the processes before the automated information systems were put in place or (2) first designating so-called migration systems, i.e., picking the best of the existing systems and forcing all users to make minimal changes to their functional processes so that they could make use of the best available system. The former approach would follow the methods used in the private sector, where it is common first to determine the best available business processes, then to buy the systems to support those processes. However, it soon became obvious that there was much resistance in many parts of the DoD to accepting changes in functional business practices driven from the top.[18] The CIM effort at significant process reengineering therefore failed in many areas to achieve a level of business process reengineering that would allow the procurement of the best available commercial platforms.[19] Therefore, the standard practice

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[18]A particularly clear example of this is the area of military personnel information management systems. For years, CIM proponents endeavored to impose a mandate on the four Services to buy commercial software and then adapt their internal personnel processes to suit the software packages. Supported by a succession of appointees in the OSD(P&R), the Services steadfastly maintained that they would not alter significant internal processes that suited them well just to fit an externally developed software system. The DSB (1996b) recently examined these issues. The recommendations of the task force are notable in that they strongly proposed a *careful examination of internal processes first, and only thereafter a selection of the best available commercial platform.* That is, after six years of no progress on this issue, the DSB task force recommended accepting the basic position that the Services and USD(P&R) have advocated all along—a position CIM proponents have vehemently attacked. If the DoD acts on the recommendations of the task force, this will be the first time that the CIM effort follows the path which is common in the private sector, i.e., reengineering of processes first, to be followed by the design of software.

[19]An area in which CIM is reputed to have caused significant improvements is in various applications in the medical field. This is perhaps not surprising, since the processes the surgeons general of the military services follow are very homogeneous, in

in most areas of CIM activities has been to designate migration systems, then postpone serious process reengineering to a later date.[20] As a result, the anticipated and hoped-for savings in many support functions have simply not materialized.[21] The CIM effort is today widely viewed as a failure in most quarters of the DoD.[22] It has not resulted in either significant process reengineering or visible savings

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comparison with other functional areas, such as logistics or personnel. Another area often cited as a success story is the consolidation of civilian personnel systems. Yet it is not clear that either of these successes can be attributed to the CIM effort, as the decisions to move to standard systems in these areas predate CIM. In any case, the savings that materialized were due to process improvements rather than changes in software and hardware.

[20]For example, the DoD is developing a Depot Maintenance Standard System that is estimated to reduce depot maintenance costs by less than 2.5 percent over ten years. This means that significant reengineering of depot maintenance processes is going to be put off for at least eight years while the interim system is being developed and deployed. Also, see the following statement:

> the CIM initiative has had little effect on materiel management business practices. DoD has focused on selecting standard logistics information systems—called migration systems—that the services and DLA are to implement by mid-1997. As a result, business process reengineering efforts (where most of the savings occur) may be delayed for years. (GAO, 1995.)

[21]In accordance with the standard practice for major management initiatives in DoD, no systematic effort has ever been made to track whether CIM efforts have succeeded in delivering the anticipated savings. In particular, CIM never established any operational goals against which performance could be measured; without such goals, failure can never be proved. In many parts of DoD, strong criticisms have been voiced both against the style of management CIM represents and against its claims to success. The only documentation that supports such claims is a series of GAO reports on CIM-related activities. For example, a recent report states that, while the Army is aware that it has overstated its inventory requirements for 258 items by nearly $200 million, it cannot rectify the problem because CIM has frozen all investments in improved information systems awaiting the definition of a new standard system, which is projected to take another four years. See GAO (1996) and GAO (1994).

[22]This is reflected in recent budget decisions. Originally, CIM had five major components: business process reengineering, enterprise integration, migration systems and legacy systems reduction analysis, data standardization, and information technology policy. In early FY96, OSD issued a program budget decision (PBD 082) that reduced CIM's central funding by half and ordered the CIM central office to concentrate on business process reengineering only. The decision also required the services to match any central funds allocated to them for specific projects. A further budget decision in FY97 (PBD 714) reduced central CIM funding by half again. This means that CIM funding for business process reengineering has shrunk from about $150 million in FY93 to $19 million in FY97. This is as explicit an admission of failure as any program is likely to receive in DoD.

in the hardware and software required to support all the varied information systems in the defense infrastructure.[23]

The CIM initiative was presented at a time when it was clear—as it is now—that there were funding shortages in the FYDP. CIM then offered the attraction that it promised savings that could be applied to outyear expenditures for which there were, at the time, insufficient funds available within the defense budget top line. Some of these savings were taken and put in the budget, but later they either did not materialize or delivered less than promised. This unfortunate situation has been compounded by the decision early on to move large segments of the funds previously allocated to the Services for system modernization to central management in the OSD, under control of the Assistant Secretary of Defense for Command, Control, Computers, and Intelligence. This created a problem: When the centrally managed funds did not deliver the cost savings promised, the investment funds needed to improve old and poorly functioning systems and platforms were no longer available. Thus poor management initiatives suck the life-blood out of future meaningful reforms.[24]

Perhaps the most interesting aspect about the CIM initiative is that it was modeled after practices that had proven successful at General Motors. Unfortunately, the centralized approach that consolidated information management in a huge private corporation with many divisions did not prove transferable to the defense complex. The culture is different, in many ways. In DoD, top management turns over with regularity and is forced to react to the contingencies created in the highly charged political environment of Washington, as

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[23]GAO has included the CIM effort in its high-risk series (a compilation of the ten federal programs most likely to fail). In the opinion of GAO, CIM ranks in terms of risk alongside such well-known horrors as the Federal Aviation Administration's failed attempts to modernize the air traffic control system, the Internal Revenue Service's inability to modernize the tax system, Health and Human Services' lack of control over Medicare funds, and the repeated problems of collecting on federally guaranteed loans. (GAO, 1995.)

[24]An indication of the level of mistrust that is endemic to such efforts as CIM is that OSD financial managers and functional oversight personnel maintain that there is no need to reimburse the Services for the seed corn that was taken away in the early part of the CIM experiment, because the Services hide funds and do not admit their existence by providing faulty information about the availability of investment resources.

well as to the real military contingencies that unexpectedly but frequently arise. This forces these managers to spend less time on actually supporting and promoting even critically important management initiatives within the department. In addition, a bureaucracy that is not persuaded that the policy the Secretary promotes is the correct strategy will find a myriad of ways to deflect or slow down implementation—if not by design, at least by continuous debate over how best to achieve what the Secretary really wants. For better or worse, both these problems have clearly plagued the CIM initiative. Such a major change can succeed only if management is acutely aware of and intensely sensitive to the very special environment in which the OSD interacts with the military departments. Major policy initiatives in the DoD succeed only if they are built on consensus and provide good reasons for everyone to support them—absent that, any initiative will fail. There is perhaps no more important lesson to take away from the controversial CIM experiment.

Another significant management initiative was introduced during the Bush administration: the creation of the Defense Business Operations Fund (DBOF). Like CIM, DBOF built on successful modern management practices in some of the best private corporations. DBOF is a revolving fund, which means that internal providers of goods and services carry an initial allocation of cash that is only a fraction of the outlays expected to be necessary during the year to produce whatever is assigned. During budget execution, the real operating funds are generated by receiving payments from customers within the DoD. At the end of the year, if the providers have been able to sell all their planned goods and services, they will have left only the same amount of cash that they began the year with, i.e., their fund will have revolved. The purpose of the cash is to provide a fund against contingencies, such as unexpected price increases for intermediate goods bought from external providers or drastic but temporary declines in demand from the internal customers during some parts of the year.[25]

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[25]For a good introduction to DBOF, see CALIBRE Systems and the Office of the Under Secretary of Defense (Comptroller) (1995).

The DBOF mimics internal markets that have been successfully implemented in many private-sector corporations.[26] While so-called industrial funds had existed earlier in the DoD, DBOF centralized the management of these funds, expanded their coverage to new business areas, and has grown into a massive operation within DoD. The best estimate of the total value of the transactions in DBOF is a little over $75 billion per year, but this is known to be too low, because certain intra-DBOF transactions are not captured by the current information systems. DBOF covers 19 different business areas, but two logistics areas, supply and maintenance operations, account for around two-thirds of the total value of the transactions.

The strategic purpose of DBOF, from a top-down, central perspective, was to improve the management of all support operations in the Services (CALIBRE and OUSD(C), 1995, pp. 2-5 ff.). Starting with the precept that all support costs in the department needed to be reduced more rapidly during the drawdown, DBOF intended to induce future cost reductions in two ways. First, DBOF hoped that giving the customer of support services cash in hand to use for buying goods and services inside the DBOF market would lead both to greater cost consciousness in consumption and to increased pressure from customers on providers to reduce costs of expensive elements of the support chain. Over time, this would lead to a reduction in requirements for resources. Second, by implementing the improved cost accounting systems required to support both the proper pricing of DBOF tradables (prices that were to be based on the unit cost of producing the relevant goods and services), senior management in the military departments would obtain much greater visibility over what the costs of operations actually were. With better information about the true costs of providing goods and services, there would be much better opportunities for managers to induce cost reductions on the provider side of the market.

While the intent of DBOF was to provide strategic information that would allow better management over time, the actual implementation of its operations has become very focused on the immediate

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[26]The discussion that follows in this section is built on work in progress on the use of internal markets for support services in DoD, sponsored by OSD(PA&E) and undertaken by one of the authors on behalf of the National Defense Research Institute within RAND.

term. The most immediate behavioral reactions to the DBOF have been those of the customers. Since the funds they have received for spending on DBOF items are provided within the O&M account, it is obvious that any savings they can find on DBOF expenditures can be used for other legitimate O&M purposes. The precise extent to which unit commanders in the Services divert dollars from DBOF to other, to them preferable, expenditures is not known, but it is documented that such practices are prevalent.[27] The result is that any efficiencies customers can induce in their operations lead to lower revenues for the DBOF providers. With lower revenues than anticipated, the cash the providers had at the beginning of the year is not regenerated through business transactions within DBOF, i.e., the fund does not revolve. Indeed, one of the most prominent features of the consolidated DBOF is that it has lost money on its sales of goods and services in the last three years of the four for which data have been published.[28] A recurring problem is that the providers are expecting revenue that does not materialize, which has led to increased reliance on "forward billing," i.e., customers are asked to pay in full up front for work that has not yet been undertaken, so that providers receive sufficient revenue to continue in business.

DBOF is under the responsibility of financial managers in the OSD and the Services, and these financial managers are subject to the very

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[27]According to sources in the OSD, most of the fund diversion is occurring in weapon systems maintenance. The DBOF deficit in maintenance alone is around $2 billion. The implication is that significant maintenance operations are not being undertaken as planned in the present budget year, but are being deferred to future years. This naturally raises the potential that future repairs will be more expensive than they otherwise would have been, had normal maintenance procedures been followed.

[28]Source: author's computations using data from the *Chief Financial Office Consolidated Financial Statement,* Defense Business Operations Fund, for Fiscal Years 1992, 1993, 1994, and 1995. The statement refers to comparing the value of sales to public and private customers with the costs of production. One endemic problem in DBOF is that the data do not allow for any consistent tracking of what transfers of funds have occurred over time. Indeed, not one consolidated financial statement has received an unqualified opinion by the auditors. This is what the Inspector General of the DoD stated in a memorandum after examining the books for FY95:

> Significant deficiencies in the accounting systems and the lack of a sound internal control structure prevented the preparation of accurate financial statements. Without a sound internal control structure, the financial information provided to management for the operation of the DBOF, as well as the financial statements, cannot be relied on for making decisions or assessing performance. (DBOF, FY95, p. 47.)

stringent rules of the Anti-Deficiency Act. It is extremely important for them to ensure that the fund does not go into the red, i.e., that the cash is not depleted so that DBOF providers are incapable of covering obligated disbursements. As a result, DBOF operations have become increasingly focused on methods for ensuring that the fund revolves.[29] For each year that the fund goes into debt, additional charges are levied on the customers within DBOF to recover these losses from the next year's transactions. This raises the prices of DBOF tradables and tends to drive customers away—with the potential for further reductions in revenues for the providers and added problems in keeping the fund solvent.

Because of this short-term focus on cash management in the financial community, DBOF has not achieved its strategic goal of inducing functional managers to find ways of reducing the cost of operations on the provider side and innovative ways of reducing the requirements on the customer side. DBOF has in its first five years of operation not demonstrated any ability to reduce the costs of the supply and maintenance pipeline in the Services. Its main contribution seems to have been to increase friction between financial and functional managers, where the former worry about the net operating result and not about the strategic goals for the fund, and the latter are under continuously increasing pressure to transfer funds from other activities to make up for shortfalls in DBOF. DBOF has become a very contentious management tool in the DoD.

In the private sector, internal markets constitute a method of delegating decisionmaking power and forcing responsibility for functional outcomes to lower levels in the organization.[30] This has not happened in the DoD: DBOF provides no additional authorities or responsibilities to managers in the Services, except that it gives them more cash—cash that can be diverted outside of DBOF. In the private sector, internal markets are often used to measure organic

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[29]Since depots are expecting funds and workload to come in that never show up, they end up with current bills that have to be paid. This is managed by forward billing, i.e., customers who are expected to send in systems for repairs next year are asked to pay part of the costs in the present year so that the deficit can be covered. This means that the debt next year increases by the same amount. Some analysts are asking whether DBOF is not about to enter a death spiral.

[30]For a particularly good analysis of private internal markets, see Eccles (1985).

performance against outside providers so as to provide information about outsourcing opportunities. This has not happened in the DoD—DBOF prices are not related in any way to market prices, even when such would be available. In the private sector, internal markets are primarily a *functional and operational* tool. This is not the case in DoD, where management of DBOF has made it focus almost exclusively on *financial* operations. These are some of the main reasons DBOF has failed to deliver on its original vision. It has not contributed to driving down costs of the support structure in the DoD, but has instead become the source of considerable tension between functional and financial managers.

In short, CIM and DBOF have not been successful in demonstrating that ideas for how to strategically manage infrastructure operations that are taken from the private sector can be simply copied and transferred to the DoD. *The main lessons of these costly experiments in reengineering is that top-down, centralized management initiatives do not appear to work in the organizational environment of the defense establishment.* Subordinate organizations seem virtually immune from control by high-level edict in the vast enterprise of the DoD. The ability of central management to enforce compliance with strategic guidance against tacit reluctance or overt opposition is virtually nil in the bureaucratic environment in which OSD and the Services interact. In the private sector, if senior management finds that its strategic guidance is not complied with, it holds the ultimate threat of firing or removing the people responsible. While this may hold true in principle in the DoD as well, in practice it is both culturally difficult and procedurally complex to fire anyone for not meeting expectations—whether it is a political appointee, a career civil servant, or a senior military officer. In the private sector, the senior leadership has a longer time horizon than in the federal government, in which top political appointees who set the direction for strategic changes turn over with regularity. As a result, top-down directive management stands a much smaller chance in DoD than in the private sector of succeeding in changing the course of the DoD over the longer time horizon—and there is some doubt that directive management techniques are effective even in the private sector.

Some things do work, however. Two particular efforts deserve mention: internal process reengineering of logistics services and base closures. Since the drawdown began in earnest, all the Services have

engaged in concentrated efforts to improve the performance of their logistics structures. Initiatives are ongoing in the Air Force relating to lean logistics, in the Army to velocity management, in the Navy to readiness-based sparing, and in the Marine Corps to precision logistics. These efforts have somewhat different focuses (e.g., the Air Force is interested in the deployability of wartime logistics to ensure adequate sustainment of forward operations, while the Army at present is mostly focused on reducing cycle times in the peacetime logistics chain.) However, they have in common at least three central features. First, they are driven and controlled by *functional managers* who are directly responsible for the operations of the logistics system. Second, they are initiated and controlled at the *Service level* without involving the top-down budgetary mechanisms of OSD and Congress. Third, rather than centralizing the introduction of improvements into operations, they take a very detailed, *process-oriented* approach on the shop floor. This clearly mimics the best of the private-sector initiatives: By taking a very hard look at the details of the various operations, it is possible to identify precisely where the bottlenecks occur. This allows for direct intervention at precise nodes of a series of sequential operations.

Figures 10.1 and 10.2 illustrate some of the principles used in ongoing activities. Figure 10.1 shows the performance of the Army active-component supply system in CONUS in 1994 and illustrates the baseline from which performance-improving activities began. The figure vividly illustrates how variable the order-and-ship time is for the items in the supply chain. It also shows how slow the average process is. Comparisons with the private sector would indicate that the Army's processes are not even close to what private corporations have shown themselves capable of.[31] The figure also gives a very clear visual representation of how long the tail is. Even though back-

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[31]As noted, the data do not represent current Army standards or performance, yet it is worth noting that the performance measured in the figure did not even meet Army standards at the time the observations were collected. At least at that time, the Army set low standards, in comparison with the private sector, and still failed to meet them.

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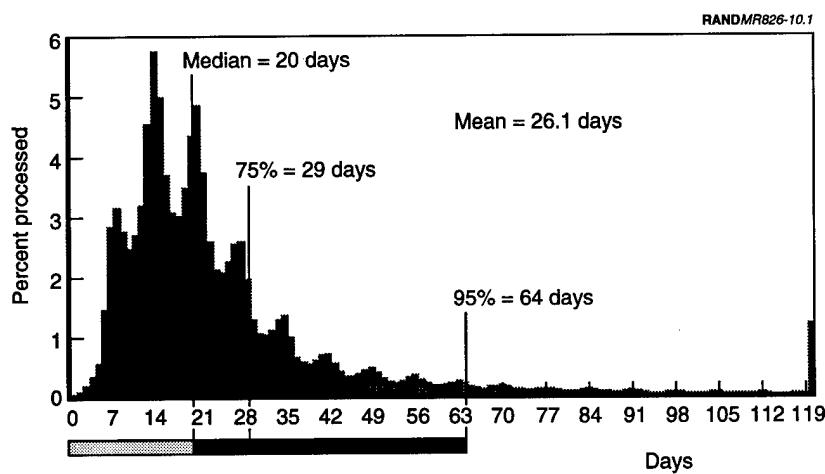
SOURCE: Arroyo Center, RAND.

Figure 10.1—Performance Metrics of Order and Ship Processes

ordered items have been omitted from these data, many items take several months from order to delivery.

Figure 10.2 illustrates some of the steps that are required to improve on the processes in the first figure. This involves, first, breaking out each and every step along the chain from initial order to final delivery. In the Army supply system, this begins with a requisition on the base level that is passed up through several nodes to a central office that authorizes the release of the part. Then the transportation system takes over, and a part will move from a central warehouse to a distribution center, then on to the base for further distribution to the maintenance shop where it is required. This is a typical batch-and-queue operation, like those that were targets for significant reengineering efforts at Pratt & Whitney.

It would be possible to extend this discussion and show applications of this approach in many parts of the long and complicated logistics chain, but this would take us too far afield. The purpose here is simply to illustrate that there are ongoing initiatives in the Services that

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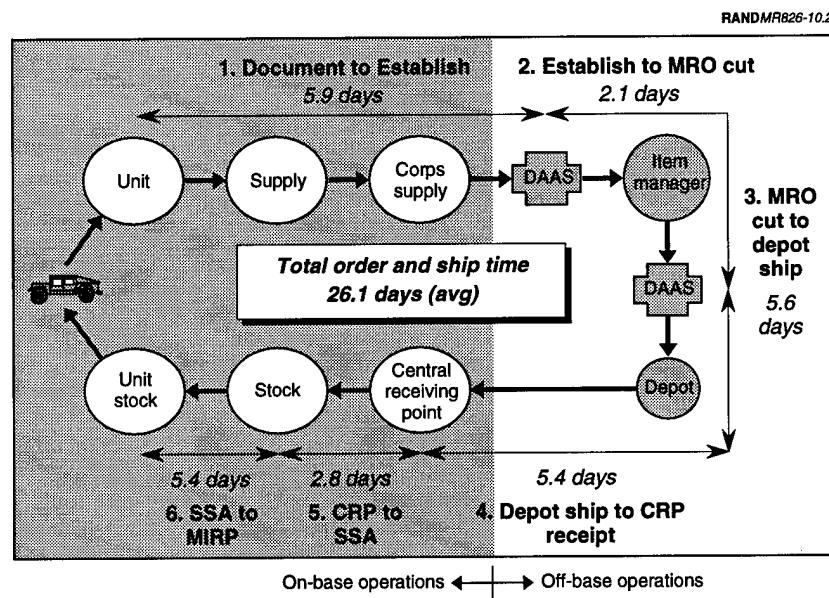
SOURCE: Arroyo Center, RAND.

Figure 10.2—Performance of Order and Ship Processes

take the detailed and cumbersome approach that has proved so successful in the private sector's best efforts at reengineering. The Army's velocity-management system will achieve significant improvements in the Army's supply system and will use combinations of all the basic tools available for reducing support costs. The Army is now expanding its focus in velocity management to include the repair cycle, stockage requirements, financial management, and the deployment process for wartime logistics. The Marine Corps is taking steps to learn from the early advances in the Army and to apply them as they fit to the Marine Corps system.

In addition to the seminal differences in approach just illustrated in comparing central initiatives from OSD with the kinds of bottom-up efforts initiated at the Service levels, it is of importance to note the inherent, quite distinct, incentive structures that are characteristic of the two approaches. In the past, when OSD has taken the initiative to promote changes in processes the Services manage, the focus has

been on that single important process for which OSD retains the ultimate responsibility: the budget. Top-down initiatives from an agency that has budgetary outcomes as its single-minded focus will tend to address all initiatives in precisely those terms. Hence, OSD will strive toward a budgetary justification for all efforts at reengineering. If the payoff is not in significant budget savings, OSD tends not to get directly involved. The important implication of this focus on budget outcomes is that OSD (and Congress) will generally insist that any significant savings from improvements in the infrastructure will accrue to the entire DoD. The secretary and the Congress take the view that it is the obligation and public duty of the Services to operate as efficiently as possible and that the improved financial results of any efficiency enhancements in functional processes must accrue to those who control the overall defense budget. They are the ones entrusted with the obligation to make decisions about where the most efficient use of added resources resides among all the competing demands for scarce funds in the budget.

From the Service level, this top-down OSD focus on savings engenders both mistrust and poor incentives. The mistrust is founded in the Services' view that any initiative originating in the OSD has as a clear agenda just to cut budgets, whether this results in reduced performance or not. This means that managers within the Services see few incentives for aggressively supporting initiatives that only offer the risk of losing resources without improving performance— indeed, as in the case of CIM and DBOF, that possibly lead to worse performance than before. Service-led initiatives, however, offer a different perspective. If process improvements lead to both functional performance enhancements and cost reductions, functional managers see a direct payoff in improved operations and also have the sense that their senior Service managers have the opportunity to put resources to better use within each of the Service's own budgets, rather than pay for transfers of funds to the other Services or centrally managed activities. In addition, local commanders within each of the Services can often retain a considerable share of the gains from process improvements within their own operating budgets, at least until a new budget justification has to be submitted. For example, if changes in the management of supplies, transportation, and stocks lead to improved weapon-system availability on a military base at a lower cost than before, the commander can use scarce O&M funding

for additional training exercises or any other worthy expense that can be validated from that account.

A critical distinction between OSD and Service-led initiatives is therefore embedded deeply into the incentive structure of the budget processes of the defense department. This observation indicates substantive reasons to suggest that Service-led initiatives stand a better chance of succeeding in improving performance and reducing costs than top-down budget cutting exercises. But it is also important to recognize that these efforts face their own internal hurdles that often make it impossible for them to proceed as rapidly, achieve as radical reforms, attain as high performance, or reduce costs as much as many private corporations have proved possible. In addition to all the legislative and regulatory hurdles discussed so far, the Services often have to contend with competing internal visions of how their internal processes should be organized. Referring to the earlier discussion of the distinction between warfighters and support providers, one could reasonably take the view that the warfighters are the ultimate customers. The warfighters have very strict requirements and often very set opinions about the particular manner in which they want the "tail" to provide support. For example, a formidable cultural challenge for logisticians, in all the Services, is convincing the operational commanders of combat units that overall performance can be improved and that total costs can be reduced by moving from a system that has traditionally been based on large inventories (often called a "just-in-case" system) to one that is based on taking advantage of new technologies and systems that allow for rapid response of every aspect of the supply and maintenance system (ideas built on the "just-in-time" successes in private corporations). Since the warfighters do not perceive themselves as footing the bill for the logistics system, in the sense that they can reap windfall dollar gains for themselves (to be used for weapons or training exercises) if there are savings to be realized, they tend to take a negative view of any new endeavor by the support elements of the force that carries even a hint of any risk whatsoever. This, then, is an additional reason it is unlikely to be easy to induce radical process reengineering in the Services. As a result, Service-led initiatives that offer the deepest changes will always be subject to the criticism that they also involve the greatest risk and therefore should be slowed down (in the opinion of those in the "tooth"—who usually dominate

at high levels in the Services). The Services are not private corporations and will never be managed like private corporations. Hence, they cannot be expected to achieve the same results—so there will always be outsiders leveling criticism that the Services are not proceeding at a rapid enough pace.[32]

The most critical element to consider in finding the most effective strategy for transferring resources from infrastructure to increased acquisitions of weapon systems is, in the end, how to provide better incentives for the Services to improve themselves faster and better. Indeed, the central lesson that should be learned by now is that process enhancements, whether through improvements of organic capabilities or through outsourcing, will result most assuredly only when the functional managers who are in charge of achieving improved performance and lower costs actually face strong incentives for undertaking the necessary actions. The implication is not just that bottom-up initiatives should receive the support from senior managers in preference to additional top-down exercises to enforce improvements but that it is absolutely necessary for central financial managers to find ways of ensuring that the Services see a direct incentive in the form of increased budgetary controls over the savings that result. This is the ultimate challenge in finding effective mechanisms for achieving the required reductions in infrastructure costs. There must be a carrot, and it cannot just be the promise of a carrot: The rewards must be real and directly tied to the hard work and long efforts required to reengineer infrastructure operations.

Lastly, a brief word on base closures. Base closures require congressional consent and have for that reason been very difficult to accomplish: Members of Congress have often successfully blocked the closure of a base in their districts. In 1988, Congress instituted a

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[32]It is possible to formulate a positive role for OSD in breaking down the barriers to significant process reengineering that exist within the military services. However, there is a very fine line between supporting the proponents for change within a service and becoming the dominant sole proponent from the outside for such changes. The former is likely to be a positive addition to the process, but the latter is more likely than not to impede meaningful changes. The danger is that many OSD-led initiatives will be portrayed by its proponents as of the first category, while being perceived by the affected parties in the military services as belonging to the second category. Whether it is better to err on one side or the other is likely to be a matter of taste, since there can be no direct data to allow discrimination between the two competing hypotheses in any one case.

successful method for circumventing parochial interests by instituting a new process called the Commission on Base Realignment and Closure (BRAC). This was actually a series of commissions (there have been four, the last one in 1995) with bipartisan members appointed by both the legislative and executive branches. The commission would receive proposals for base closures and realignments from the Services, review them to see if they met certain criteria the secretary of defense established, and vote on the merits of each proposal. The result would be a list of acceptable proposals for base closures. When the commission had finished reviewing all proposals, the president would sign the list of acceptable closures and submit it to Congress. Congress would then voted the entire list up or down, under restrictive rules that permitted no substitution on the list, i.e., no member could protect constituent interests without endangering the entire package. The rule further required *both* houses of Congress to vote against the proposed closures; otherwise, the closures would automatically be enacted. If Congress enacted the closures, the president could veto the bill by refusing to sign, but this would force the BRAC process to start all over again from the very beginning. In spite of strong political pressures, no Congress has voted down a proposed list of closures from the commission, and no president has refused to sign the legislation to close bases.[33] It is therefore particularly dismaying that the executive branch in the last year found a way to reintroduce politics into the base closure process.[34] Unfortunately, this is both likely to reduce the savings attainable and to make Congress show significantly lower enthusiasm for base closures in the future; with considerable validity, opponents of another BRAC can now argue that it is unfair that the president should be allowed to play politics with base closures in a pro-

[33]For a recent description and evaluation of the BRAC process, see Glass (1996). The antecedents and current legislation are described in Chapter II.

[34]BRAC had suggested that both Kelly AFB in Texas and McClellan AFB in California be closed and that certain activities performed there be transferred to other, better-suited bases. To mitigate job losses in politically sensitive districts, the president ordered the secretary of defense to ensure that the activities carried out in both places be privatized in place, i.e., outsourced to the employees who would face layoffs in the closure. Obviously, the net effect of this is that the facilities to which these activities were slated to be moved will now be underutilized and that the jobs that would have been created in these alternative sites now will not be created. By playing politics, the administration only succeeded in redistributing the pain and reducing the net gain from closing two large Air Logistics Centers.

cess specifically designed to prevent members of Congress from doing precisely that.

Base closures have proven more costly and more time consuming than anticipated at the enactment of the BRAC legislation. As a result, the savings that were so eagerly awaited have not materialized—at least, not yet. It is estimated that base closures will ultimately yield savings of $56.7 billion in net present value over a 20-year period (Glass, 1996, p. 19). The vast majority of these savings will occur after the implementation period (which is six years for each BRAC, which means that BRAC IV closure activities are expected to be finalized by 2001). During implementation, outlays for base closures are projected to be $23.4 billion and savings to be $28.7 billion, i.e., the net savings over the entire BRAC period is only $5.3 billion, with the rest occurring in the outyears (Glass 1996, p. 91). Even these relatively modest savings will only materialize toward the end of the implementation period; up to the present, base closures have not, in the aggregate, provided any savings at all, only increased outlays. There are several reasons for this. Partly, increasingly strict environmental standards have significantly raised the costs of closing bases; partly, the sale of assets, especially real estate, has not brought the revenues that were anticipated; partly, the actual closing of bases has taken more time than anticipated because of very stringent procedural requirements that involve many federal, state, and local agencies, as well as community groups (Glass 1996, p. 96).

BRAC is by far the most successful method devised so far of closing bases. Between 1977 and 1988, no military bases were closed; as a result of BRAC, it is anticipated that DoD will close 97 out of 495 major military installations in the United States, or about 20 percent. While BRAC has not yet delivered the budgetary savings envisioned, it has successfully reduced infrastructure in one of the most highly politicized areas of the defense budgets. It is important to note that accomplishing even this partial victory required a completely new method for forcing legislation that had been impossible to attain in the past. It is very likely that equal ingenuity is required to attain significant savings in other infrastructure accounts.[35]

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[35]In particular, many are now arguing for the invention of a BRAC-like process to speed up outsourcing and privatization.

AN ALTERNATIVE ANALYTICAL APPROACH

The argument up to this point is this:

- Accelerated modernization of weapon systems beyond current plans for authorizations must be funded, and the defense budget top line is unlikely to increase.

- Infrastructure is the preferred bill payer within the defense budget.

- Infrastructure is a complex set of activities that have been targeted before with limited success.

- Many DoD infrastructure activities are inefficient and redundant when compared to the private sector, but no one has been able to make an overwhelming and compelling case for the need of a radical shift of mindset among support customers and providers.

- The current efforts at outsourcing and privatization of commercial activities are promising but face many internal and external hurdles.

- Private-sector experience offers the promise of very radical improvements from combining outsourcing through partnerships with deep reengineering of all internal processes.

- Past top-down efforts at creating budget savings through edict offer little hope for the immediate future.

- The most positive efforts are actually undertaken within the Services themselves in response to internal budget pressures and enhanced understanding of available alternatives.

- Successful efforts, such as BRAC, may require entirely new and innovative processes.

- The best hope for significant infrastructure reductions comes from creating the correct incentives within the Services for trading butter for guns, i.e., excess infrastructure for new weapon systems.

An explicit theme of the preceding sections of this chapter has been that, while it is easy for senior policymakers to enunciate policy ideas and to order their implementation within the many subagencies of

the DoD, it is often very difficult for those policymakers to monitor and ensure that the ideas are actually carried out according to the intended schedule and that they are executed in ways consistent with the original strategic objective. If anyone were to write the history of most major policy initiatives directed at improving infrastructure out of the OSD, it would show a path littered with the corpses of mangled management intentions, unrealized strategic objectives, and hastily reformulated goals to cover up the carcasses of failed visions. This is in spite of the fact that most initiatives were built on conceptions that have proven sound in other enterprises, particularly in the private sector. There sometimes is considerable difficulty in translating corporate ideas to the public sector, and there are deep-seated differences between the private sector and the DoD that suggest that it is not possible to make a simple transfer of management practices from one to the other. The most striking difference between a private corporation and the DoD is that top managers in the private sector have much more authority to ensure the implementation of significant management initiatives than a secretary of defense does. There are many reasons for this, but two, in particular, stand out:

- The secretary of defense and his senior policy advisors are political appointees who often have limited expertise in managing large organizations and who usually only stay in their appointed positions for a few years; hence, they lack long-term expertise in managing such a huge and complex enterprise as the DoD, are forced to learn on the job quickly, and are not afforded a sufficiently long time to ensure successful implementation of major management initiatives.

- The secretary of defense is limited by a culture of long standing that allows the military departments a very strong institutional voice in the formulation of policies and considerable independence in their implementation. In particular, personnel rules in both the military and the civil services make it extraordinarily difficult to hire new people rapidly to fill key positions or to fire those who cannot carry out assigned tasks satisfactorily.[36]

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[36]It is actually easier to fire a uniformed service employee than a civil servant. Military personnel are accustomed to frequent reassignments, and if a senior policy maker so desires, a uniformed employee can be "fired" by being removed from a current assignment and sent back to his or her service's personnel system to await another

The consequence is that management initiatives originating in the OSD must rely on the decentralized execution by career servants, whether civilian or military, who have seen many initiatives pass by them from former secretaries and their appointees and who know that there will soon be another series of initiatives from a new group of senior managers in the next administration. This creates a set of forces and institutional incentives that simply have no counterpart in the private sector. Successful implementation of even meaningful and correct management principles requires a different understanding of this very special environment and how extraordinarily difficult it is to manage. A significant reengineering of the policy process regarding the managing of the infrastructure is necessary. It must begin by analyzing the different motivations that determine the actions of all the significant agents, as well as the particular policy and management tools at their disposal to try to make the process produce what they separately view as their legitimate goals. Only when these forces have been well understood can a proper method of trading infrastructure for weapons be found; if it can be understood better, it should yield greater insights into the DoD management process as a whole and have wider applications beyond infrastructure cuts.

By setting up the analytical conditions in this manner, it is implicit that a formal analytical method that could fruitfully be applied to the problem is mathematical game theory.[37] The problem can be outlined the following way: Find a solution to a noncooperative game in which the players have conflicting goals and different action opportunities that constrain their choices, but in which they have to find a common solution without outside enforcement, under conditions in

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assignment. However, this is not done lightly, especially in the case of officers, as it invariably implies a black mark on the individual's record. As is well known, it is even more difficult to reassign a civil servant because the civil-service protection system was put in place precisely to limit the authority of political appointees to reassign civil servants at will.

[37] A general definition of game theory is that it is the study of decision processes involving several decisionmakers. What sets it apart from other methods—such as constrained optimization, which is widely used in economic analysis—is that each agent makes autonomous decisions in anticipation of expected reactions by the other independent agents. It is this interaction between agents that yields the interesting dynamics of game theory. For an introduction and a survey of applications to many economic problems, see Gibbons (1992).

which they all are very suspicious of each other's ability to announce and stick to a cooperative strategy, i.e., the level of trust between the parties is virtually nil.[38] This is a somewhat different approach from that which commonly permeates policy discussions, where it is assumed that top policymakers can force all actions within the DoD to be consistent with their best intentions because everyone involved is motivated by good will and/or public duty. For the actual policy process in DoD, however, game theory seems a much more appropriate analytical construct than the textbook management vision.[39] Apart from being a more accurate view of the management environment of DoD, it is hoped that a game theoretic approach will give fresh insights into how to develop more successful policies for cutting infrastructure in actuality.

To illustrate how this approach might be applied to the problem of trading infrastructure for modernization in the DoD, let us begin by examining the direct interests that are at stake at one particularly critical level of the defense establishment. Too many players and organizations are involved to treat all levels and organizations here and to represent the entire system adequately in one analytical construct. They all have in common that each of them represents different institutional interests with different enforcement tools for reaching their goals. By illustrating the principles involved at one crucial nexus in the policy process, the hope is that an understanding

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[38]It is important not to personalize games of this sort. The use of the word "trust" here does not necessarily imply that people do not trust each other in the normal sense of that word. Rather, what gives stability to mathematical games is usually the ability of the players to announce a clear strategy of how to react, such as playing tit-for-tat, i.e., a positive move from one side results in a positive response, and vice versa. In this context, the word "trust" implies the ability to announce and to abide by a clear and well-known reaction function. There are two separate factors involved: One, each agent acts independently, and, two, neither has perfect information about each other's real intentions or even actions. This means that, while there may be a high level of personal trust in the good will of all the players of the game, trust in the technical sense may be very low if a player does not believe that his counterpart can carry through the announced strategy for reasons related to institutional constraints rather than personal motivations. This is why we often speak of institutional mistrust; it has nothing to with personalities.

[39]This is not to deny the fact that mathematical game theory has been applied to analyze the management of private corporations. However, the management models DoD chose to emulate are of the top-down, hierarchical view that is the heart of elementary textbooks and that fits the general perception of how a large public entity should be managed.

of the objectives and the means available will lead to the outlines of a stable solution to the game, at least at that level. If the approach seems promising, it can then be generalized to other levels. For simplicity, we restrict the game to only two central players. Since we are interested in the policymaking within the DoD, we will focus on the relationship between the secretary of defense (player A) and a single military department (player B).[40]

This characterization of the game flies directly in the face of the formal rules set in place in U.S. Code Title 10, which is the compilation of all laws that Congress has enacted for the function, organization, and management of the armed services. It spells out the responsibilities of the Secretary of Defense, the secretary's staff, the Joint Staff, the Commanders-in-Chief, and the military departments. It describes the secretary as being in charge of the DoD, and the Services reporting to him in a strictly hierarchical relationship. The Services are delegated the execution of the budget and have responsibility for manning, equipping, and training the force—*under the direction and control of the Secretary of Defense*.[41] This textbook relationship stands in direct contrast to the first rule of the game to be described, i.e., that there are two coequal players, A and B, each of whom can execute independent strategies and each of whom can react to the actions taken by the other player in the game.

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[40]This characterization leaves out two other critical players in the game. One is Congress, which ultimately can break or enforce any arrangements made between the secretary and the military departments. The other is the major commands within the Services. These are critical organizations in that they are the actual functional managers who have to agree to the principles along with the leadership in the military departments. Further elaboration of the game theoretic construct must consider these players as well.

[41]U.S. Code Title 10, Ch. 2, ¶113(b) states:

> The Secretary is the principal Assistant to the President in matters relating to the Department of Defense. Subject to the direction of the President and to this title ..., he has authority, direction, and control over the Department of Defense.

The DoD is defined in ¶111 of the same chapter as consisting of the military departments, the joint staff, defense agencies, and the unified and specified combatant commands. For each of the military services, Title 10 states the following:

> The Department of the [Army, Navy, Air Force] is separately organized under the Secretary of the [Army, Navy, Air Force]. It operates under the authority, direction, and control of the Secretary of Defense.

See U.S. Code Title 10, Ch. 303, ¶ 3011; Ch. 503, ¶5011; and Ch. 803, ¶8011.

An explicit assumption in the game is therefore that, while it is true that Title 10 describes the formal responsibilities assigned to the parties involved, the reality is very different. The manner in which budgets are carefully built up in the Policy, Programming, and Budget System (PPBS) is not nearly as top down as one would believe by reading abstract descriptions of the process. Rather, the budget the DoD presents to Congress (through OMB and the president's budget) already represents a consensus document that includes many compromises between programs proposed by either side within the department. A secretary of defense can have a very strong influence over the program and the budget, but his authority is, in the end, limited by his ability to create consensus. The secretary and the military departments are therefore more akin to *partners in producing the military forces* that support the national military strategy. In reality, the Services are much more than just subordinate organizations that blindly obey the priorities the Secretary and his immediate staff assistants establish. The Services have considerable power to create and become strong proponents for their own visions of how the national security strategy should best be prosecuted, and every effective secretary of defense will find ways of accommodating the parts of that agenda that do not directly contradict the priorities that the Congress, the president, and he himself have set.

The military departments ultimately also have it within their power to thwart policies enunciated by and supported by the secretary of defense. A significant point in the preceding discussion has been to demonstrate that a series of DoD-championed policies has not been successful in reducing infrastructure costs. The intention here is not to suggest that these policies have necessarily failed because they have met with overt or tacit opposition from the Services; in fact, the point was made repeatedly above that some policies DoD has proposed failed because they were poorly conceived and poorly managed. Whether the policy initiatives coming from OSD are good or bad, the central fact is that the military departments have to execute those policies, and it is much better to find policies that they support rather than oppose. The Services will never *openly* oppose a secretary of defense. They will debate fiercely before decisions are made, then, when given orders, they will execute those orders. The U.S. military is not disloyal to its civilian leadership. At the same time, it

is a very effective proponent for its own particular views and does not give up on strongly held convictions.[42]

In the game described here, the two players, A and B, have a set of strategies that describe their institutional prerogatives.[43] For sim-

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[42]Perhaps the greatest institutional difficulty for the secretary of defense is that almost no decision he makes ever seems final. Many decisions only last as long as the president's budget proposal to Congress. After the OSD has prepared a budget and it is included in the president's budget to Congress, DoD begins to work on the next budget. That immediately opens up all issues again, and the debate only ends temporarily with another budget. To one who is unfamiliar with the reality of this seemingly indecisive process, it may appear that dead horses are continually brought in and beaten even after they have been put to rest. The truth is, however, that few horses ever die in the DoD budget battles. They are ordered out for slaughter, but magically reappear when the next budget is debated. This is an inherent characteristic of the budget process—and may be viewed as either its seminal strength or its seminal weakness, depending on one's vantage point. In a repetitive political budget battle, there are few permanent victories or defeats.

[43]At this point in the development of the analytical approach, it is necessary to make a strategic choice between two broad alternative expository frameworks, both of which are special cases of mathematical game theory. One alternative is to couch the discussion in terms of a principal-agent framework, an analytical method that has provided many important insights into especially the economic analysis of regulatory problems. One characteristic feature of the principal-agent framework is that the principal can enunciate clear goals for the agent to implement, but he has only limited information about how the agent actually carries out the orders given—a feature that seems very consistent with what is described above as one of the signal conditions in the DoD. Another feature of the framework is that the principal and the agent typically have different and conflicting objective functions, and the principal can take the initiative to induce the agent to act in accordance with the principal's intent by offering a clear payoff to the agent, such as a profit-sharing arrangement or other reward that is a linear function of performance. This feature of the principal-agent approach is not consistent with reality in the DoD. The secretary and the Services do not have conflicting objective functions—both desire the best national security the defense budget can buy and differ only in what they consider the best strategy to reach that goal. In particular, however, an important feature of the defense establishment is that *either player can take the initiative* to increase the likelihood of realizing the commonly desired outcome. In addition, a central feature of the principal-agent framework is that the principal is limited in reaching his desired end state only by the accuracy of the information that is available regarding the agent's actions and the functional outcomes that result; the implication is that problems between the principal and the agent can be resolved by better information. The same is not true in a prisoner's dilemma, because even if there is perfect information about actions and the resulting outcomes, there remains the problem of the two parties having independent decisionmaking authorities and differing views about the best future course of action to reach even a common goal. For these reasons, we have chosen to use the prisoner's dilemma approach, which will be described in the text. In formal mathematical terms, a prisoner's dilemma is much more demanding than what can possibly be achieved within the limits of this chapter. Indeed, as will be shown below, an adequate charac-

plicity, we deal only with two strategies. Player A controls the decision to buy new weapon systems, i.e., A can determine what systems to acquire, the magnitude of funds devoted to modernization, and the timing of new acquisitions. A has two strategies: A_1 is to deny modernization, A_2 is to allow B to buy a particular new system. B also has two strategies: B_1 is to avoid cutting infrastructure, and B_2 is to undertake the cuts that would allow transfer of funds directly to modernization.

Player A therefore controls the benefit to B (modernization), and B controls the actions that are necessary for the benefit to accrue (cutting infrastructure). The benefit of modernization accrues to A as well, so there is a mutual gain from possible cooperation. The difficulty of the game arises from the following conditions:

1. A cannot direct B to undertake the cuts in infrastructure but can only induce those cuts by the promise of delivering the benefit (modernization), i.e., by announcing a strategic reaction function that specifies how A will respond to any move by B.[44]

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terization of the relationship between the secretary of defense and the military departments would require a multiperiod analysis under imperfect information, which demands introducing probabilistic estimates of the time paths of payoffs under alternative possible reaction functions. This is probably the most analytically demanding mathematical game that can be described, and so it is quite beyond what can be resolved in this chapter. Nevertheless, the points to be made in this context are heuristic, and the dynamic prisoner's dilemma has certain attractive expository characteristics that allow us to make some relevant points regarding the high-level management issues of interest in cutting defense infrastructure. Since the same points can, in principle, be made by using a principal-agent framework, it is to us largely a matter of preference which approach is chosen. This is particularly true since those who are interested in the fairly arcane discussion in this footnote clearly have sufficient knowledge that they can, in their own minds, simply translate the prisoner's dilemma language employed here to a principal-agent terminology, should they find that profitable and entertaining.

[44]Many reaction functions are possible. However, tit-for-tat (TFT) has the most attractive features. TFT is the strategy that a player matches exactly the actions taken by other players—if they cooperate, so does TFT; if they defect, so does TFT. The following five features are usually stated as the major advantages of TFT. One, TFT is nice in the sense that it does not take the initiative to defect; it begins by cooperating and only reacts to the other players' actions. Two, TFT rewards cooperative behavior by identical cooperative behavior. Three, TFT metes out immediate and proportional punishment for defection by precisely matching the negative action of another player. Four, TFT is a very forgiving rule; i.e., if a defecting player changes his actions to becoming cooperative, TFT immediately rewards the change of behavior by also cooperating. Five, TFT is a very simple rule to use and to explain and therefore

2. The mutually desired end state is one of obtaining modern systems through lower infrastructure, but the joint payoff to the players only accrues after several periods. Decisions can only be made one period at a time, so it is not possible to move from the initial state to the end state in one move. In the intervening periods, the infrastructure cuts are painful for both parties, and there is no immediately offsetting benefit in increased modernization, because of the delays in acquisition. This creates the need for patience, i.e., accepting present costs for future benefits.

3. A has one more element in his objective function, which is to minimize, in every time period, the total budget for defense expenditures. Therefore, it is in his *immediate* interest to induce B to cut infrastructure in exchange for a promise to allow modernization, then to use that money for defense-budget reductions. So, if A's time preference is very high, he will find it rational to renege on his announced strategy and take the immediate benefit and put off the promised modernization. B recognizes that A is subject to this temptation.

4. This creates the risk for B that the difficult cuts in infrastructure that he is forced to undertake may not yield the desired benefit, i.e., increased modernization. B can make the first play of the game by taking the infrastructure cuts but has to rely on a promise from A that A will forgo the temptation to use the funds released by infrastructure cuts for other high-priority uses, such as decreasing the size of the total defense budget or transferring the money to another Service.

5. It is also possible that A can make the first play. In this case, A allows the acquisitions to go forth and has to hope that B executes his part of the strategy, which is to cut infrastructure. As was just

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becomes obvious and understandable to all players very quickly, all of which is critical to making it credible and therefore stable throughout the game. This reaction function has been studied extensively in practice in a series of fascinating papers by Axelrod (1980a, 1980b, 1981, 1984). Using a tournament approach that pitted various possible reaction functions against each other, he found that TFT is the best *overall* reaction function. In particular instances (such as very hostile games), other reaction functions may work better; but over time and across all strategies, TFT dominates. For a recent test of the importance of immediate and commensurate reactions in TFT with results that are consistent with Axelrod's work, see Komorita (1991). For a discussion of the possibility of TFT emerging spontaneously and providing stability in a game of strongly self-interested players, see Axelrod (1981).

discussed for A, B also has a short-term interest in avoiding the cuts in infrastructure as long as A can be induced to allow modernization to move forward. A also knows that B's announced reaction function may be violated.

6. B has one additional strategy consideration that is implicit in the game but which will not be directly considered. This is to wait. Waiting can bring the status of existing weapon systems to such a dismal condition that modernization must be done without cutting infrastructure. The risk in such a strategy is that A may then order additional cuts in force structure instead.

Figure 10.3 illustrates two conceptually possible versions of this game. Each of the games is described by a series of simple payoff matrices.[45] The payoffs in the games are notional—a full characterization of the game would require assigning credible values to the probabilistic payoffs in some relevant metric that is not available.[46] Game I is intended to show the conditions necessary for reaching the optimal end state, i.e., a successful trade of infrastructure expenditures for new weapon systems through three periods of time; Game II shows what can happen to prevent the optimal end state from being attained.[47] Each game is assumed to last three periods, with moves

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[45]As noted in a previous footnote, a full description of the game would require expressing it in standard mathematical terms. This is not done here because the purpose is not to demonstrate the existence of a solution or its stability but only to highlight the broad conceptual features of the game. The overall dilemma arises from the fact that each of the players is a prisoner of his institutional environment. Hence, the game has a solution only to the extent that each player can be induced to rise above short term incentives. The game construct is useful in showing how difficult it is to find a resolution to this problem and in pointing to some generic solution concepts that have practical implications.

[46]The ideal metric would express a universally acceptable understanding of the contribution of each strategy to the common goal of enhancing national security—for example, conceptual units called MATS, for Marginal Additions to Security, preferably translated into dollar terms. The numbers in the matrix should be thought of as units of MATS—the nonexistent, ideal metric.

[47]Mathematical games are usually solved by identifying something called a Nash equilibrium. This is the state that is reached when each player follows that strategy that maximizes his or her payoff for *any* possible strategy followed by the other players. This is not the same notion as a Pareto optimum, which is defined as that end state in which no one can be made better off except by making someone else worse off. Game I illustrates the Nash equilibrium under the assumption that the players can make believable commitments to the Pareto-optimal strategy; Game II is the Nash equilibrium under the assumption that the Pareto-optimum becomes unattainable

Game I: optimal strategies

	Period 1		Period 2		Period 3		Total	
	B_1	B_2	B_1	B_2	B_1	B_2	B_1	B_2
A_1	50,50	60,40	50,50	60,40	50,50	60,40	150,150	180,120
A_2	40,60	40,40	40,60	40,40	40,60	100,100	120,180	180,180

Game II: suboptimal strategies

	B_1	B_2	B_1	B_2	B_1	B_2	B_1	B_2
A_1	50,50	60,40	50,50	60,40	50,50	60,40	150,150	180,120
A_2	40,60	40,40	40,60	40,40	40,60	40,40	120,180	120,120

Figure 10.3—Illustrative Payoff Matrices from Policy Game

and commitments being made in periods 1 and 2, and the desired end state becoming attainable only in period 3. The purpose is to illustrate one central feature of infrastructure reductions, i.e., that they induce short-term pain because they are so difficult to attain but only deliver benefits in the longer term (most vividly illustrated by the case of base closures). Several periods are required to capture the feature of the real world that, even if current dollars can be moved from infrastructure operations into weapon-system acquisitions, there is a considerable time lag between ordering systems for development and fielding them in operational units. This involves a considerable risk for both parties, in that the systems may cost more and deliver less than planned; hence, a particular problem for the Services is that they face giving up infrastructure operations in each period but may never see the resulting weapon system if the secretary decides to cancel the acquisition. From the secretary's point of

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because one or more players defect. This may be due to the announced reaction functions not being sufficiently credible or because one player has too high a time preference to seek the Pareto optimum.

view, the opposite risk occurs. He may desire infrastructure reductions, but fear that the program management of a new acquisition may refuse to acknowledge that extraordinary risks are present and that the DoD is caught buying systems that should be developed. Only a multiperiod game can capture these problems.

The upper left-hand corners of the matrices illustrate the payoff in each time period if both players make no move beyond the status quo, i.e., current levels of infrastructure and acquisition are maintained.[48] Strategies (A_1, B_1) yield a payoff of 50 units of MATS for each of the players in every period.[49]

The lower right-hand corners show the payoff from player B making the infrastructure cuts while A allows the planned modernization to go forth. Strategies (A_2, B_2) yield the payoff of 40 units of MATS for each player in periods 1 and 2 but then produce the desired prize by rewarding them with 100 each in the third period. This is the desired end state that maximizes joint or total payoffs; the combined total of 360 units of MATS in the bottom right-hand corner of the last matrix in the first row is the highest sum obtainable. To get to that end state, each player must announce a strategy for each period, then follow that strategy without failing. The arrow from the lower right-hand corner in the boxes for periods 1 and 2 in Game I illustrates the course of the game under the assumption that each player picks the strategies represented by (A_2, B_2) in both periods 1 and 2.

The other two elements of the matrices represent the payoff to each of the parties if they follow a short-term strategy of maximizing

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[48]The strategies the two players pursue must be based on some specific objective function. As noted above, the prisoner's dilemma construct allows each of the players to pursue the same objectives; a critical difference between them is that they either (a) disagree on the best path to reach a common objective or (b) receive different payoffs if the optimal end state is not attained. Either condition would induce them to pursue self-interested strategies that best serve short-term, institutionally defined interests. In the secretary's case, this is the need to reduce the budget in each time period to the minimum possible; in the Services' case, it is the possibility of waiting out the current secretary and hoping for a better deal with the next one.

[49]Since the purpose of presenting the game is purely heuristic, the payoffs in the matrices are presented as certainties. A proper mathematical representation would represent the payoffs as probabilistic, each described by a density function with a known mean and variance that are conditional on every possible strategy chosen by the other player.

immediate benefits. In the upper right-hand corner, strategy (A_1, B_2) represents the case in which player B undertakes the painful cuts in infrastructure, but player A refuses to let the savings be added to modernization. Here, the payoff for B is 40, but the payoff for A is 60, the highest level obtainable for A in the matrix for period 1. Likewise, the lower left-hand corner shows the payoffs when B says he will undertake the cuts in infrastructure but in reality does not do so, and A has already committed to the increased modernization. In that case, the payoff to A is 40, and to B it is 60, the highest level obtainable for B in the matrix.

Clearly, the short-term incentive for each of the parties is to announce the intention of playing the active strategies (A_2, B_2) and then do nothing. If the other party follows the long-term strategy of maximizing the payoff in the third period, as was the agreed-upon intention of the players, the immediate payoff is the greatest for the party who reneges on the announced strategies. If, however, both of the parties stick with announced strategies, period three delivers the benefit, i.e., the payoff of strategies (A_2, B_2) are 100 each. In that case, the total payoff for the three periods is the largest obtainable, or 180 for each player. Clearly, it is to the *long*-term advantage of both parties to announce and follow through on strategies (A_2, B_2). This is simplistically demonstrated in Game I.

In Game II, the arrows indicate what happens if either party does not act as promised in the first period. The result is that the maximum payoff in period three is reduced to a minimum payoff instead. In other words, the only way to attain the maximum payoff of Game I is to commit to a cooperative long-term strategy, then for both parties to stick with it. This forces reductions in payoffs in periods 1 and 2 below what is attainable in the other quadrants, as indicated by the low payoffs from strategies (A_2, B_2) in those periods, but yields a high bonus in period3. The totals in the last matrix show this as the dominating joint long-term strategy.

Several important implications emerge even from this elementary characterization of the game. Among them are the following:

- The probability that either of the players will announce the jointly maximizing strategy and then fail to carry through depends on the size of the maximum payoff from a cooperative

strategy, the short-term payoff from a noncooperative strategy, and the discount rate that applies to the future payoff. If the future payoff is distant, if the discount rate is high, and if the amount of investment required in each period to reach that payoff is high, the temptation to maximize short-term payoffs by choosing the noncooperative strategy becomes very high, and Game I breaks down into Game II, with the end state being the minimum joint payoff.

- Each player must be convinced that the other player will stick with the cooperative strategy, otherwise the joint payoff cannot be maximized. A reputation for being able to deliver on commitments is critical, and past and current relations between the parties will determine whether they each can come to trust the other.[50] Hence, it is important that both invest in creating a mutually supportive relationship.[51] Anything either party can do to demonstrate reliability and an unwillingness to break a commitment to the other will be of high value in permitting the cooperative strategy to be chosen so that the maximum payoff of Game I becomes attainable.

- If there is any significant degree of lack of confidence in one of the parties that the other will not abide by the commitment to the jointly maximizing strategy, they are both likely to choose the noncooperative strategy which prevents the attainment of the optimum of Game I.

- If such lack of confidence is prevalent, it can be overcome by creating conditions in which the parties make small initial commitments, build up confidence that the other player is able to abide by the agreed upon strategy, then proceed to the next step.

- It may be impossible to build the required trust if one of the parties (say, A) is likely to exit from the game and be replaced by

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[50]Again, the intention is not to personalize the relationships. The organizations discussed here have different objectives and different constraints. The reputations involved are only partly connected to individuals and are more directly dependent on the institutional objectives and prerogatives that have been demonstrated over time.

[51]This is both personal and institutional. A good personal relationship can overcome institutional mistrust; an endemic problem is that personalities change very quickly with turnover of personnel both in the OSD and in the military departments.

another unknown player at some enforceable time in the future, especially if that new player does not understand the rules of the game at all, e.g., by not recognizing it as a game of coequals but by viewing his position as a manager portrayed in the business administration literature with all the powers spelled out in Title 10 at his command. In that case, A can only commit himself for the short time that he plays the game, and cannot bind his or her successor in office. This is clearly one of the endemic weaknesses inherent in the OSD. As a political appointee, the secretary's time in office is uncertain, but likely to be much shorter than the senior leadership of any of the Services, all of which demonstrate remarkable continuity in their long-term policies even when a chief is replaced.

The central conclusion to these observations has already been demonstrated many times in economic and political applications of game theory. When no outside enforcement is possible, the players of the game have to devise their own internal rules of interaction to find their way to the best feasible solution.[52] In the context of DoD, this necessarily implies that stable interactions between the secretary of defense and his principal staff assistants, on one hand, and the Services, on the other, must be built on constant institutional behavioral patterns. The turnover of senior managers is such that personal trust cannot suffice for changing long-ingrained *institutional* relationships. The change required transcends personalities and must be institutionalized.

THE CHALLENGE: REENGINEERING THE POLICY PROCESS

The game-theoretic approach suggests a series of steps that the secretary of defense should follow. This section focuses on three major areas in which institutional changes can be proposed that tie directly to the vision of DoD as a game of equal partners rather than hierarchical entities: first, on translating the game strategy of trading infrastructure for weapons into actual policy; second, on changing OSD's focus in managing functional processes; third, on the implications for how defense agencies should be managed.

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[52]That is, to find the Nash equilibrium that is also the Pareto optimum, as defined above.

To translate infrastructure obligations to weapon systems, the most fundamental requirement is that the secretary and the military departments agree on this strategy and that each views the other as making a firm commitment to pursue this vision steadfastly. For the arrangement to work in the budget process, there would have to be two separate ledgers that are closely tied to each other: one for the modernization accounts, the other for the infrastructure accounts in which the resources are to be found for funding modernization. Obviously, the intent here is to create a firm connection between infrastructure cuts and acquisitions *by institutionalizing this relationship in the programming, budgeting, and execution phases of policy decisionmaking.*

There are enormous obstacles in firmly ingrained customs to accomplishing this. It is currently a very entrenched practice that *all* amounts programmed into the out-years of the FYDP (i.e., the years beyond the current budget) are conditional in the sense that they are subject to the future availability of funds. If the envisioned funds fail to materialize, if unfunded contingencies arise, or if planned cuts prove impossible to realize, modernization and acquisition are often pushed forward into future budget years as a matter of course.[53] The same is true during the execution of an enacted budget. If immediate and urgent contingencies arise, there is at present virtually no other place to find sufficient funds quickly in the budget outside of acquisition. Typically, this is the only account in which large discretionary amounts are available. The inflexibility of the intricate budget rules often forces senior managers to find the required funds by pushing modernization and acquisition out into the future.[54]

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[53]Sometimes this is done in *direct contravention* of established policy guidance. For example, the BUR envisioned the acquisition of certain weapon systems that were later postponed for lack of funds. Thus the policy clearly announced in the BUR was blithely violated when expediency demanded.

[54]It has happened in the recent past that the Services themselves have found it necessary to move funds from modernization into infrastructure in order to cover programming holes that are discovered only in execution. This fact does not obviate the points made here: The central problem is that budget shortfalls, whenever they occur, are much more likely to be made up by raiding the largest discretionary account available, which is modernization. What matters is the inflexibility of the infrastructure accounts relative to the acquisition accounts, which is due to the budget rules, not who is forced to make the unpleasant decision to put off modernization once again.

The reality is that present modernization plans are *already conditional upon performance.* The essential difficulty with current practices is that modernization has been, de facto, the *preferred* bill payer. A fundamental problem is therefore that the Services are held hostage not just to such cuts that they may be able to control by their internal policies and management priorities but also to external events over which they have no control—such as unanticipated price increases that may affect any part of their budgets (especially in acquisition and O&M accounts). All they can really be certain of is that, when unanticipated and unbudgeted contingencies arise, acquisition accounts are likely to be used to fund shortfalls. This has been the practice for many years. *It is precisely this institutionally ingrained reaction function that must be changed.*

Under current procedures, the implication of such policies is that the Services will see the secretary as continually reneging on announced commitments as soon as any difficulty arises. They know, from oft-repeated experience, that all planned but uncommitted modernizations are perpetually in jeopardy. They therefore also expect that any cuts that they may offer up in the budget process cannot and will not be firmly committed to modernization. Hence, their hearts will not be in those cuts. Their support for secretarial initiatives that promise new acquisitions in exchange for cuts is weak because the promises are not regarded as solid. Fundamentally, the secretary and his staff lack the credibility to carry such proposals through the budget process.

The next response from the OSD is then equally predictable and has been demonstrated repeatedly over the years since defense budgets started to decline. If the military departments do not on their own initiative produce the required cuts in infrastructure accounts, these cuts will be *mandated as part of the budget process.* This leads to one top-down initiative after another. In practice, these do not work because they have to be executed by the Services themselves and because the Services do not accept the credibility of the implied promises to use savings for high-value purposes.

The result, to put it in the terminology of a prisoner's dilemma game, is that both the Services and the OSD pursue what they perceive as their best strategies, but the DoD as a whole ends up in a suboptimal end state, i.e., we are now—year after year—observing the actual

playing out of a version of Game II as just presented. The central point of the preceding analysis is that it indicates that there is only one player who can take the first step to prevent this dismal result from obtaining—the secretary of defense. The preceding analysis suggests that the only way he can accomplish this feat is by *announcing a strict and acceptable reaction function and sticking to it.* Only by demonstrating convincingly to the Services that it is the firm intent of the secretary to fence modernization accounts and to use every scrap of savings that the Services can find in excessive infrastructure for new systems will it prove possible to trade butter for guns.

Even if this commitment by the secretary to avoid raiding modernization accounts were established with a high degree of credibility, a significant budget hurdle still remains. This relates to firewalls between appropriation accounts. As noted in the second section of this chapter, most of the potential savings in infrastructure must come from two large accounts: O&M and MILPERS. Somehow, a budgetary mechanism must be found by which savings in these accounts can be translated into increases in acquisition accounts. Under current rules, this cannot be done without congressional consent and involvement.

This means that the secretary must take another crucial step in convincing Congress about (1) the strong desirability of modernization and (2) the necessity to raid infrastructure to pay for weapons— rather than the other way around, which has been the practice up to now. These are formidable political challenges. If the requirement to modernize and recapitalize cannot be couched persuasively, the game is for naught in any event. At a time of relative calm in international security affairs, somehow the case must still be made that now is the best time to buy new systems and to pay for them in politically painful ways.

Then, and only then, can the Services be expected to pursue drastic cuts in infrastructure aggressively. Internal incentives must be created in the budget process, and external support from Congress must be secured. If these tasks appear difficult, it is worth pointing out— again—that past attempts to cut infrastructure have generally not proved successful. Table 10.5 summarizes the points just made.

Table 10.5

Required Changes

Current Practice	Amended Practice
Tentative schedule for modernizations	Tentative schedule for modernizations
Top-down managed attempts to cut infrastructure	Service-managed cuts to infrastructure subject to agreed-upon goals
When funds are short, postpone modernization	When funds are short, fence modernization
	Create political support for strategy
Result	**Likely effect**
Too slow modernization	Faster modernization
Too much infrastructure	Less infrastructure

Table 10.5 suggests three significant changes. First, in the realization that infrastructure cannot be managed from OSD, the secretary negotiates goals for infrastructure reductions in acceptable areas, then allows the Services to manage how this is to be accomplished. The implicit arrangement is that these cuts can then be used to fund new weapon systems. Second, the secretary commits, openly or implicitly, to fencing off modernization accounts from unanticipated cuts arising from unanticipated exigencies. This is the most radical departure from current practices. It would force the secretary to find other ways of funding short-term emergencies, some of which are politically and administratively very difficult to execute. Third, the secretary directs his principal staff assistants to concentrate on making the case for how to trade infrastructure for modernization to the American public and their elected representatives in Congress.[55] The implicit suggestion in the table is that, without such a credible commitment to fencing modernization and without allowing the Services to manage infrastructure cuts, the desired end state is probably not attainable.

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[55]This would entail a significant change in management culture within DoD. Now, the secretary's staff assistants are much more likely to concentrate on managing internal policy initiatives than to present to Congress and the American public the case for accepting painful changes.

The second important change that is implied by the game-theoretic view is that various detailed management initiatives that have originated in the OSD should be terminated. A fundamental point in the discussion above has been that it is virtually impossible for OSD to micromanage functional and operational processes in the Services to the degree necessary to realize promised budgetary savings. This means that the principal staff assistants should cease OSD-led managerial initiatives that are designed to instruct the Services how to make the trade-off between quality and cost of services.

A complete review of all ongoing initiatives and management actions by which OSD is attempting to alter the way in which Service functional responsibilities are organized is far beyond the scope of this chapter. Only a few central infrastructure issues that have already been touched upon will be mentioned:

- The CIM initiative

- The DBOF

- Various initiatives in the logistics area, such as Total Asset Visibility and Logistics Response Time.

These and all other management initiatives in OSD should be thoroughly reviewed from the perspective of whether they are consistent with a basic philosophy that accepts that successful reductions in infrastructure require a different institutional focus than has been used in the past.

The major suggestion that is implied by the analysis above is therefore that the secretary of defense order a comprehensive study of ongoing initiatives and relationships in all areas in which the principal staff assistants exercise oversight responsibility for Service managed programs. Such a review will reveal that several very different models and philosophies are represented throughout OSD. On one extreme, there is the by now virtually direct management of programs and budgets in most aspects of the medical establishment that the ASD for Health Affairs conducts. On the other, there is the central information gathering and occasional support that is characteristic of the personnel area, where it is clear that the Services are in

charge of all aspects of the functional operations.[56] Somewhere in between these two endpoints fall many other initiatives, such as the ones listed in the bullets above, where much of the enthusiasm for intervention in OSD seems to be driven by a firm belief that the Services need outside help in attaining achievable management improvements.[57] The substantive review proposed here should (1) examine the nature of the various ongoing initiatives and (2) propose some methods for evaluating their effectiveness in reaching clearly articulated goals.[58]

The third implication of this analysis relates to the management of defense agencies. In the context of this chapter, we are interested only in those defense agencies that have functions included in the broad concept of infrastructure. The following agencies are therefore of particular interest here:

- Central Imagery Office

- Defense Commissary Agency

- Defense Contracts Audit Agency

- Defense Finance and Accounting Service

- Defense Information Systems Agency (DISA)

- Defense Intelligence Agency

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[56]For example, OUSD(P&R)/ASD(FMP) sets certain limiting policies in compensation and promotion, but does not manage their implementation. The same office provides cross-service support in recruiting (joint advertising and youth attitudinal surveys), but does not manage recruiting; instead, it is content to monitor the recruiting effort and report to the secretary and the Congress on any general problems that need to be addressed in the budget process.

[57]Few doubt that significant improvements are possible; what is under discussion here is not whether these opportunities exist, but only how to achieve them most successfully.

[58]Generally, OSD-led initiatives are not noted for being subjected to close scrutiny and evaluation. Once started, they tend to take on a life of their own, and are very difficult to stop even when there is no visible evidence that they work as intended. It would therefore be of considerable value if a comprehensive review of ongoing management initiatives in all the staff offices of OSD could support a recommendation for a consistent set of methodologies of evaluations that relate clearly enunciated policy goals to specific outcomes. This would set a basic standard that present and past initiatives have never before been held to.

- Defense Logistics Agency (DLA)
- Defense Fuel Supply Center (DFSC)
- Defense Mapping Agency (DMA).

All these agencies provide specific services for the military departments. Some deliver services that are critical to the warfighting capabilities of the forces, in particular perhaps the last three on the list above—DLA, DFSC, and DMA. In the past, several of these agencies grew up as efforts to save resources by attaining the economies of scale inherent in many activities. In some cases, of which DLA may be cited as one example, it is possible that central management has allowed a higher degree of efficiency of operations than would have obtained had the Services continued to manage the operations separately. In other cases, of which DISA may be one example, it is not clear at all that any specific benefits have resulted—DISA has become closely tied up with the ill-reputed CIM initiative.

There are three important reasons these agencies should be carefully reviewed in the context of a careful examination of how the secretary of defense should manage his relationship with the Services for the purposes of achieving desired cuts in infrastructure to buy weapons systems:

1. First and most important is the argument above that successful reductions in infrastructure can best be accomplished through a deliberate change in management philosophy that de-emphasizes hierarchical relationships built on top-down direction and orders in favor of incentivizing behavior and rewarding beneficial outcomes. In that context, all agencies that have grown up over time as attempts to manage functions centrally must be subjected to a careful bottom-up review. If centralization can be proved to have significant cost-benefit advantages, the question remains whether such agencies should be managed by Service executive agents or by OSD staff assistants.

2. By implication, a strong argument can be made for reverting to allowing the Services to manage centralized functions as executive

agents.[59] This is that agencies managed from the OSD are not subject to the same programmatic and budgetary trade-off analysis that is at the very heart of the PPBS system. When building a longer-term program and translating this into a budget, each of the Services is forced to make explicit or implicit decisions on the relative merits of this expenditure versus that one. In that context, each Service is expected to make deliberate decisions regarding support costs and forces, as well as between all valued activities in the budget. Defense agencies are budgeted outside of these careful deliberations because certain resources are set aside for these agencies before the Services receive their respective top lines, within which they then find the best trade-offs. As a result, not all the resources for defense agencies are formally included in the total budget within which all the difficult decisions to prioritize between desired activities are made. It is very possible that defense agencies, as a result, receive greater funding than the Services would prefer to give them. By removing defense agencies from OSD and merging programmatic and budgetary considerations regarding them with all other resources the Services manage, the total amount of resources that the Services have with which potentially to buy weapon systems would increase considerably.

3. The third reason it is time to reconsider central management of defense agencies is that it is no longer necessarily the case that the benefits from large-scale operations are as great as they once might have been. Modern studies of process reengineering note how contemporary technology allows small-batch production of many items at much lower costs than could be attained by the large-scale mentality that was the hallmark of industrial production of the first five or six decades of the 20th century.[60] Particular

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[59]Opponents of executive agency often voice a concern that the Service that is in charge will give priority to its own interest over that of any other Service. This is a chimera, because there are various possibilities of ensuring that this does not happen. One is to require that the executive agent include senior managers and functional representatives from all the Services; another is to let the executive agency rotate between the Services. In fact, this is exactly how DLA is managed, except that this agency reports to OSD instead of to one of the military departments.

[60]This was one of the signal discoveries when Toyota—the preeminent forerunner of modern process reengineering in manufacturing—radically reinvented all its internal processes. See, in particular, Ohno (1988).

examples of this are now being pursued in DLA's Direct Vendor Delivery efforts, which bypass DLA's inventory and transportation system completely. If DLA increasingly becomes only a procurement agent for military bases, it is clear that its original mission is changing in fundamental respects. Hence, the time seems propitious for a review of its function and relationship both to OSD and to the Services.

To conclude, there are several important steps that the secretary could take to implement a management philosophy based on a realization that the game-theoretic framework is a better description of the environment in which he interacts with the military departments. Certain steps that lead to an explicit or implicit trading arrangement can be taken within currently existing budgetary processes, but others require fundamental changes in how OSD relates to the Services. The issues involved are of such a magnitude that a series of further studies elaborating on the concepts advanced here, as well as carefully considering the major aspects of their practical implementation, are all that can reasonably be recommended.

An important final complication is, of course, that a secretary, in the end, can only propose budget requests to a Congress that has to authorize and appropriate the required funds. The secretary may wish to play the difficult long-term strategy, may be perfectly sincere in striking an explicit or implicit bargain with the Services, and may even be willing to institutionalize it by putting the programmer at his or her right side in place of the financial manager. But Congress can thwart his or her commitment and best efforts if elected legislators decide that they will not or cannot support the proposed modernizations. In the end, the secretary is probably limited in his or her ability to achieve meaningful change in the relationship between the military departments and OSD by the support that can be mustered on Capitol Hill. This only means that the internal strategy of improving management of the military departments must be matched by a political strategy to make the internal DoD changes understood and accepted by legislators.

SOME IMPLICATIONS FOR THE QDR

This analysis has proceeded on the implicit assumption that the practical long-term implications for how the DoD should approach infrastructure cuts in general are of the greatest interest. The question is whether there are also some short- or medium-term suggestions that arise from viewing internal DoD management as a noncooperative game. This question is motivated by the fact that the primary focus of the QDR will be on the FYDP, that is, five to six years into the future.

Above all, the QDR must firmly establish the case for modernization. The most essential basis for trading infrastructure for weapon systems is a sense of urgency. In a relatively few years, it will be necessary to recapitalize older weapon systems. The continuing expansion of technology will also offer very attractive opportunities for new systems. Unless a very strong case is made in favor of the potential for modernization, we are likely to continue to see a bloated infrastructure and very tight reins on the acquisition of new weapons.

Analytically, the most difficult problem for the coming QDR is that certain elements of the infrastructure are not needed at present, but may be useful to have in the future, should the United States again face a large threat somewhere in the world. Foreign bases, in particular, fall into this category. Once these are given up, it is very difficult, if not impossible, to regain them. Similar arguments may hold for various parts of the U.S. infrastructure as well. For example, certain training areas may not be needed now, but may be impossible to reopen if given up in base closures. This suggests that the requirement for certain infrastructure should be based on very long-term estimates of the force structure.

The implied point is that the decision whether to eliminate or preserve certain parts of the infrastructure requires an investment decision regarding the value of certain fixed assets. It is not analytically correct, as is often simplistically done, to suggest that there should be a strict proportionality between force structure and infrastructure. Depending on the strategic vision of the future, it is possible that infrastructure should shrink more or less than force structure. In practical terms, this means there will be a good deal of uncertainty about the size and shape of DoD's infrastructure over the long term.

The QDR should also seek an independent validation of the possibly excessive savings proposal from the DSB summer study on infrastructure reviewed above. Before such numbers as $30 billion per year in infrastructure savings are put into the budget, careful analysis remains to be done.[61] This analysis can best be done by the Services that manage the functional processes involved. This presumes that they can be given credible incentives for believing that the infrastructure cuts they propose actually translate into weapon-system acquisitions; if the Services do not believe that this is going to occur, infrastructure cuts of the future are not likely to be more successful than those in the recent past.

The most important element the QDR analysis can contribute to policies for cutting infrastructure accounts is a list of critical modernization needs for the longer term. From this, the QDR can estimate the funds needed at each point in time and the precise weapon systems that must be bought. Absent a good long-term basis for analysis, this is a fundamental building block in driving infrastructure cuts. The next step is to complete the list of systems to be acquired by adding those weapon systems that the Services would like to develop but that may not be on top of the QDR's list prepared or implied by its analysis. The result of this will be a list of desired weapon-system acquisitions that the Services and the secretary of defense agree upon, in the clear knowledge that not everything on that list can ever be acquired.

The QDR should then develop a series of recommendations, not on further management initiatives, but on how to attack all the impediments to infrastructure reductions. This means pressing Congress for a new BRAC, removal of impediments to outsourcing, and much greater internal DoD control over the geographic location of military support activities. One of the most significant problems DoD faces is micromanagement by congressional committees. The secretary and all his political appointees should focus on making the case to Congress that the required modernization of weapon systems and,

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[61]As noted above, the DSB panel on infrastructure suggested potential savings of $30 billion per year, without providing any credible supporting analysis. The danger is that, once savings of that magnitude are bandied about, they tend to take on a life of their own, no matter how loose their foundation. The QDR offers an important opportunity to validate these numbers.

indeed, the overall force structure itself can only be sustained if they are willing to accept some pain for constituents. By implication, it is probably a very good investment for DoD to agree to perhaps significant transition assistance in certain cases in which the local economic impact is significant. However, this should be made on a very selective basis only, as it is known by now that most communities are perfectly capable of coping with the short-term stress caused by downsizings.[62]

CONCLUSION

The main point of this chapter is to suggest that it will be impossible to come to grips with the need to cut infrastructure without serious analysis of the reality of the relationship among all the players of the game. Top-down attempts to order cuts in infrastructure have often failed in the past because the policies themselves have been of questionable quality. Just as important, perhaps, is that they have usually been founded on a vision of internal relationships between the substantive players of the game that does not comport with reality. The CIM initiative, DBOF, and rapid outsourcing of commercial activities have been founded on a positive—and probably generally correct—vision of what can and should be accomplished but have not succeeded in realizing more than a small portion of that vision. The signal fault in all of them is that they have not recognized the institutional reality: *The DoD is too complex to manage from the top*, at least in such a diverse set of activities, such as infrastructure, that often are managed five or six levels below the secretary. Because of the relative independence of internal managers and organizations, edicts historically have worked poorly. The suggestion is that *organizational incentives and the ability to abide by strategies that only pay off in the long term are more important in making formally subordinate*

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[62]The primary task of the DoD's Office of Economic Adjustment (OEA) is to assist communities that adjoin military bases slated for closure to adapt and adjust to the inevitable economic changes. OEA has tracked over 100 base closures over 20 years and has shown that—with the exception of one or two instances—the jobs lost from the base closure have been regenerated within the community in a few years. In many cases, communities actually prosper even more after a base closure than before. Recent independent analysis has confirmed much of this. For a comprehensive review of the impact of defense cutbacks on the California economy, see Schoeni et al. (1996), Dardia et al. (1996a), Vernez et al. (1996), and Dardia et al. (1996b).

divisions that in reality are quite independent undertake the difficult actions they are asked to implement.

If this is a correct view, the implications are profound. Infrastructure cuts should be left to the military departments to carry through and should, in general, not be managed by OSD. The secretary should not order the cuts; he should be a proponent for them and should directly tie successful cuts to his support for modernization and force structure. The secretary should set *fiscal targets and proposed timelines* for what he and the Services can agree on as realistic goals. The PPBS process should then formally tie these anticipated cuts directly to acquisitions. If the military departments are incapable of delivering as promised, the budget and the program are reordered—as is already established practice. Such an approach would require the secretary to rein in his enthusiastic staff in OSD, whose inclination often is to attempt to take charge of an initiative and run it as their own (e.g., the two current logistics initiatives, Total Asset Visibility and Logistics Response Time). It would also require the secretary to involve the military departments in short-term budgetary decisions that are at the present often shrouded in secrecy. The secretary would have to delegate the responsibility for undertaking the cuts to the only managers who so far have shown any ability at all to implement serious process reengineering, i.e., civilian and military leaders at the Service levels.

Rather than unsuccessfully attempting to manage the military departments internally, the secretary can then spend his main effort on making the implicit deal a reality. Trading infrastructure for accelerated modernization is going to require a major political effort over the coming years. It is not only the acquisition system or the A-76 process or restrictive legislation that impedes outsourcing. As of now, the Services have too many bases and installations—in particular, maintenance depots—and the excess must be closed to fund modernization. Can a secretary and the president persuade Congress to allow another BRAC? At a minimum, this will require finding effective ways of demonstrating to the Congress (1) that the president will not again play politics in his own favor with the base closures when that is exactly what the process means to deny members of Congress; (2) that DoD is serious about mitigating financial transition problems that laid-off civilians and affected communities face; and (3) that the historical data, commonly held prejudices

notwithstanding, clearly demonstrate that the impacts of installation closures on workers, families, and communities are nowhere near as severe as the strength of the political opposition would suggest. These are formidable *political* challenges.

This suggests that the correct strategy for the secretary of defense to pursue is to use his status as the senior political appointee to work the political end of the problem. The internal management should be left to the senior leadership of the Services. The secretary can most effectively induce them to do the necessary and unpopular thing by working hard to create the outside support for the difficult cuts and to make the Congress and the American people accept the required trade of butter for guns.

There are two central themes in the ongoing, never-ending discussion of how to reform and right-size DoD infrastructure. One states how difficult it is to change the way the DoD does business; the other states how necessary it is for DoD to change the way it does business.[63] The analysis of this chapter points to OSD as the central place where the most fundamental changes have to occur. Perhaps the greatest difficulty the secretary of defense faces is that he has to undertake the most fundamental changes exactly where it is most difficult of all—in the OSD. Principal staff assistants and their staff are much more comfortable attempting to tell the military departments how they should manage themselves than they are in setting strategic goals and defending these to the American public and elected representatives.

That method of managing the DoD has been tried repeatedly, with very little to show for it. It is time to alter the most fundamental concept of all, which is how the DoD actually functions internally. The alternative is a further weakening of the force structure—and that danger is very real indeed. But, surely, America's continued military strength is too important to sacrifice for a flawed vision of how internal management in DoD should work. Let the game be seen for what

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[63]The following two quotes are illuminating and instructive: "The Department of Defense must change the way it does business." Deputy Secretary of Defense (to be) John White, speaking as Chairman of the Commission on Roles and Missions, January 1995. "Why does the DoD do business the way it does? Because it has always done business that way." Don Shycoff, former Deputy Comptroller of Defense, *The Businesses of Defense*, JKS Publishing Co., 1995, p. 17.

it is, and let the real game begin. Everyone can win if that game is played right.

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CONCLUSION

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The United States is the world's chief provider of security and international stability. Without question, the U.S. role as security partner of first resort has worked to the interests of our allies. With the United States committed to defending common interests abroad, our allies can forego potentially ruinous arms races with their neighbors so long as U.S. commitments are backed by credible military capabilities and the resolve to employ them judiciously.

Key questions for Americans in the post–Cold War era are to what degree such an arrangement is in our own interest and whether we can continue to afford to play this role. Unquestionably, the United States has important interests at stake in Eurasia and other regions. The best way to protect and advance these interests is to invest in stability abroad by nurturing and adapting the security relationships we have built with allies and friends. By playing a leading role in protecting common interests against military threats, the United States is entitled to expect its partners to do their parts to contribute to a stable order in their regions and to the advancement of common interests worldwide. The vitality of this partnership depends critically on the capabilities of U.S. military forces: Our security relationships can remain viable only as long as U.S. forces are capable of defending U.S. and allied interests.

But those forces must be affordable. It will do us little good to field the finest military force in the world if our economic vitality is crippled by the effort. Fortunately, in the post–Cold War world, it seems clear that we can field a force that is affordable and is capable of sup-

porting an ambitious strategy of leadership and engagement abroad. Today, the defense budget constitutes less than 4 percent of the nation's gross domestic product—the lowest it has been since before the Korean War and certainly a figure that in the past has been consistent with robust economic growth. So further major reductions in U.S. defense spending should be avoidable, but a significant shift in investment patterns within DoD will be necessary.

The trick is to ensure that we invest in the military capabilities that will provide the greatest leverage. U.S. defense strategy works best when the nation has at its disposal military capabilities that can be used with highly asymmetric effects. The United States rarely fights wars over interests that are truly vital, that is, directly tied to the survival of the nation. Our adversaries, however, sometimes do, and, because of this, they may be prepared to sacrifice more than we are in the course of a conflict. U.S. forces, therefore, must be able to accomplish their missions while incurring, at most, modest losses and sparing civilians. In light of these demanding requirements, the defense leadership must not overlook opportunities to enhance the capabilities of U.S. forces in such key areas as force survivability, precision, effectiveness, and responsiveness.

To provide these capabilities, DoD's leaders will have a wide array of promising new programs among which to choose. High on the priority list should be new battlefield sensors and platforms (many of them unmanned), a new generation of smart munitions, multilayered defenses to shoot down theater ballistic missiles, enhanced capabilities for suppressing and destroying enemy air defenses, and airlift aircraft for global mobility. To fund such extensive modernization, it will be necessary to break some traditional modes of thinking and operating in the U.S. defense establishment. Defense planners will need to examine new and more challenging scenarios and will need to use assessment techniques that reflect the revolutionary impact of new capabilities more accurately and more clearly than previous models. Outdated defense infrastructure and cumbersome business practices will need to be discarded. The Army's reserve component will need to be downsized and reshaped. And the U.S. military posture abroad will need to be reviewed. Each of these tasks poses real strategic, analytical, and political challenges.

Together, they constitute a daunting agenda that will require fore-
sight, sustained leadership, and considerable political courage to
carry out.